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A DIRECTORY OF SELECTED OLDER MARITIMES PLANTATIONS

R.C. West

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Maritimes Forest Research Centre

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A DIRECTORY OF SELECTED OLDER MARITIMES PLANTATIONS

by

R.C. West

Maritimes Forest Research Centre

Fredericton, New Brunswick

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ABSTRACT

Plantation forestry is a major component of the intensive forest management programs of Nova Scotia and New Brunswick. Plantation yields of 210 m^3/ha are now required of all licensees in New Brunswick. A directory is presented of selected successful older plantations in the Maritimes that are nearing or have exceeded the 40-year rotation age prescribed in provincial guidelines. This will provide forest managers with a reference for measuring the success of recent reforestation operations.

RÉSUMÉ

La foresterie des plantations est un élément important des programmes d'aménagement intensif en Nouvelle-Écosse et au Nouveau Brunswick. Dans cette dernière province, on exige de tous les détenteurs de permis de plantation un rapport de 210 m^3/ha. On présente un répertoire de certaines plantations âgées et réussies dans les Maritimes. Ces plantations ont dépassé ou sont près de dépasser les 40 ans de rotation prescrits dans les lignes directrices provinciales. Ce répertoire constituera, pour les aménagistes, un document de référence pour mesurer le succès de restaurations forestières récentes.

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INTRODUCTION

The province of New Brunswick is anticipating a problem with the supply of commercial softwood species within the next 15-30 years (Baskerville 1982). The Province has several options to mitigate the effects of this supply shortage. As a top priority, intensive forest management to increase the rate of growth through reforestation and to improve the growth of natural stands by thinning has been selected. This approach leads to an immediate increase of up to 20% (Anon. 1982) in the sustainable softwood supply.

Localized softwood shortages are expected in Nova Scotia by the year 2000 (Anon. 1983a). The Nova Scotia Department of Lands and Forests is now involved in a program of intensive forest management to reduce the effects of this impending shortage and to ensure future wood supplies. By the mid 1980s the combined government and private nursery production in Nova Scotia will be 28-30 million seedlings which will reforest 10 000 ha annually (Anon. 1983b).

Current management planning guidelines in New Brunswick require licensees of crown land to ensure plantation yields of 210 m^3/ha of merchantable wood in 40 years (Anon. 1984). In Nova Scotia, the Department of Lands and Forests is expecting their plantations to yield 168 m^3/ha after 40 years (Anon. 1983b). Current plantation production may reach or possibly exceed these rates. By using the results of this study of older plantations that have better than average survival and growth, it may be possible to evaluate the performance of contemporary operations.

Most plantations included in this directory were established prior to 1950 and account for 80% of the areas surveyed. They are nearing, and in many cases have exceeded, the 40-year rotation age prescribed in management guidelines for both Nova Scotia and New Brunswick. However, about 20% of the selected plantations were established between 1950 and 1960, and were included because they represent middle-aged plantations with excellent growth performance and potential.

Historical information was unattainable for most of older plantations in the Maritimes provinces and it is impossible to compile an accurate record of stand tending or the genetics of the planted seedlings. Information on thinning, which is included in the remarks sections, was usually obtained by observing cut stumps. It is probably safe to assume that all the plantations were established with stock of unimproved genetic quality.

It must be remembered that these plantations appear to be above average in growth performance and are the most successful of an unknown number of establishments, of which many or perhaps most were failures. It would be unrealistic to expect all or even most operational reforestation efforts (using unimproved stock) to achieve the same succcess rate as those selected. Their volume and growth are presented as a goal for forest managers.

SURVEY METHOD

Government and industry foresters in the three Maritime provinces were asked to assist in locating older plantations. Additional candidate sites were located by searching unpublished reports prepared by both federal and provincial governments on plantation forestry in the region (Hughes, E.L. and L.G. Yarn 1968[1]; West, R.C. 1980[2]).

Each plantation was visited by Maritimes Forest Research Centre field staff

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[1] Survey of planted red pine in the Maritime provinces. On file at Maritimes Forest Research Centre, Fredericton, N.B. under Study 63-M-2.

[2] Summary of older plantations in New Brunswick. On file at the Forest Management Branch, New Brunswick Department of Natural Resources, Fredericton, N.B.

to determine by radial increment sampling (taken at 0.15 m) and visual observations if it could be classified as an older plantation with above-average growth. As a general rule, only plantations established before 1950 were considered, although some areas established between 1950 and 1960 were selected if they appeared to be superior. About 20% of the surveyed plantations were established after 1950.

Following selection, each plantation was measured and photographed. The inventory procedure followed was the point sample method (Smith and Murray 1973) using a basal area factor 2, metric prism. Points were taken at 40 m intervals with a minimum of five points per plantation or 12 per hectare. The diameter of all trees in the tally was measured with steel calipers. The height and diameter of the two trees nearest each prism point center were obtained with a diameter tape and hypsometer.

DATA COMPILATION

Each plantation was accurately located on both a detailed map and an aerial photograph of the area. The aerial photo was further used to determine the plantation area. Number of stems per hectare (by diameter and height class), and merchantable and total volumes were calculated.

Height over diameter curves were drawn for each plantation and the number of stems per hectare stratified by height class was determined. Mean heights and diameters were calculated by an average which was weighted by the number of stems tallied in each diameter class.

The total volume for each species was obtained by height and diameter class (Honer et al. 1983).

Merchantable volume for each plantation was estimated. The plantations that were surveyed may be harvested by several methods to produce different end products, and the merchantable volume will vary accordingly. For example, the merchantable volume would be considerably less if a plantation were cut for utility poles or lumber than if it were full-tree logged and shipped for pulp. The merchantable volumes presented in this report were derived from Honer's volume tables (Honer et al. 1983) using a stump height of 0.15 m, inside bark top diameter of 7 cm, and the regression coefficient for "all species."

DATA PRESENTATION

Plantations are grouped by province. Each plantation record has a summary which contains information on ownership, location, planting date, current inventory, identifying number assigned by planting agency, the national topographic grid reference (Appendix II), and, where possible, tending history. A reproduction of the national topographic map and a reduced aerial photograph are presented to locate each area accurately (see Appendix I and II). To complete the data presentation there are two ground photographs of each plantation.

CONCLUSIONS

No attempt has been made to summarize or average the growth performance of the plantations presented in this report; rather each is considered unique. Because of a lack of published information it is difficult to compare the performance of the older Maritimes plantations with those in other parts of Canada.

Several authors have recorded detailed growth information on older plantations at the Petawawa National Forestry Institute (von Althen and Stiell, 1982; Stiell and Berry 1973a,b). A review of this data indicates growth rates similar to those recorded from plantations of similar ages in the Maritimes.

The majority of plantations surveyed in this report is red pine (Pinus resinosa Ait). This is an accident of history as red pine seems to have been the most commonly planted species up to the late 1950s. Its frequency of occurrence in this report should not be interpreted as a recommendation of its preference for plantation forestry. Similarly, the infrequency of occurrence of other species should not be considered as a condemnation of their usefulness in reforestation.

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APPENDIX I

MAPS AND AIR PHOTOS

All aerial photos used in the directory have been reproduced to a scale of 1:10 000. The original photography was at the following scales:

All New Brunswick photos = 1:20 000
All Nova Scotia photos = 1:10 000
P.E.I. National Park photos = 1:5 000
All other P.E.I. photos = 1:12 000

Maps used to locate individual plantation are photographic reproductions (no scale change) of the appropriate sections of 1:50 000 National Topographic Series Maps.

All original maps and air photographs can be purchased from Maritime Resource Management Services in Amherst, Nova Scotia.

APPENDIX II

GRID REFERENCING SYSTEM

The military grid referencing system (Sebert 1970) is used in this directory to locate the exact position of a plantation on the 1:50,000 National Topographic maps.

The following excerpt from "Every Square Inch" should explain the use of the grid system to those unfamiliar with it.

To arrive at a map reference of the church shown in Figure 1, we would first note the numbering of the lines that form the west and south of the square. As mathematicians have for centuries given the "X" coordinate before the "Y" coordinate, map-users follow suit by quoting eastings before northings. Therefore the designation of the square containing the church would be 9194. To give a reference of the church itself, we must imagine the square divided into 100 smaller squares (ten by ten). Now we estimate by eye that the church is six tenths of the way between lines 91 and 92. In the same way we can estimate that it is four tenths of the way between lines 94 and 95. Using these facts we can quote the eastings as being 916 and the northings as 944. By convention, these are run together into a reference 916944.

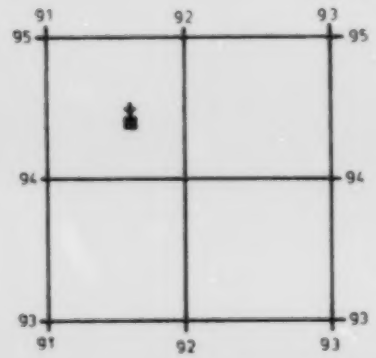

FIGURE 1

Selected Older Plantations in NOVA SCOTIA

Plantation Record

Species: *Scots Pine (Pinus sylvestris L.)*

Plantation # *N.S. 1* **Provincial Reference:** *N/A*

Location: *Paradise, Annapolis County*

National Topographic Map # *21 A/14* **Grid Reference:** *268707*

Aerial Photo # *A-77310-89*

Date of Survey: *08/06/83* **Size of Plantation:** *0.25 ha*

Date of Planting: *1934* **Present Density:** *1610 Stems/ha*

Age When Surveyed: *49* **Average D.B.H.:** *24.4 cm*

Planting Agency: *Private* **Average Height:** *21.9 m*

Present Land Owner: *Private* **Present Vigor:** *Very good*

Former Stand Type: *Agriculture*

Total Volume: *593 m^3/ha (84.8 cu/ac)*
MAI: *12.1 m^3/ha (1.73 cu/ac)*

Merchantable Volume: *555 m^3/ha (79.3 cu/ac)*
MAI: *11.3 m^3/ha (1.62 cu/ac)*

Remarks: *Trees are tall with good form. There is an extensive undergrowth of hardwood shrubs.*

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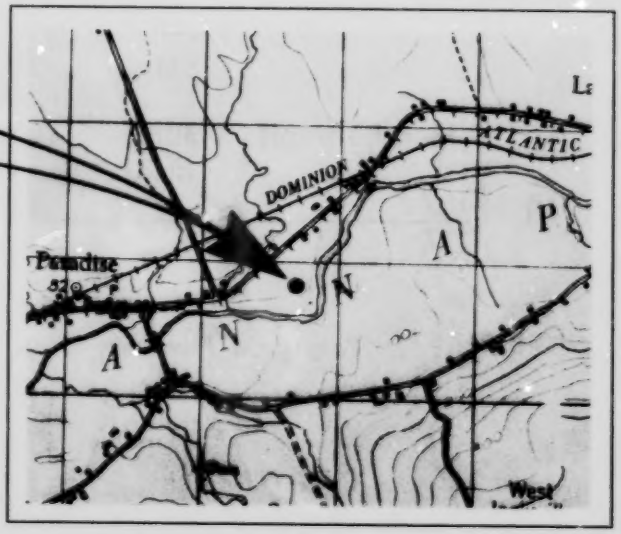


N.S. 1

Plantation Record

Species : *Scots Pine*

Plantation # *N.S. 2* **Provincial Reference :** *N/A*

Location : *Paradise , Annapolis County*

National Topographic Map # *21 A/14* **Grid Reference :** *267708*

Aerial Photo # *A-77310-89*

Date of Survey : *08/06/83* **Size of Plantation :** *1.8 ha*

Date of Planting : *1943* **Present Density :** *975 Stems/ha*

Age When Surveyed : *40* **Average D.B.H. :** *26.4 cm*

Planting Agency : *Private* **Average Height :** *21.1 m*

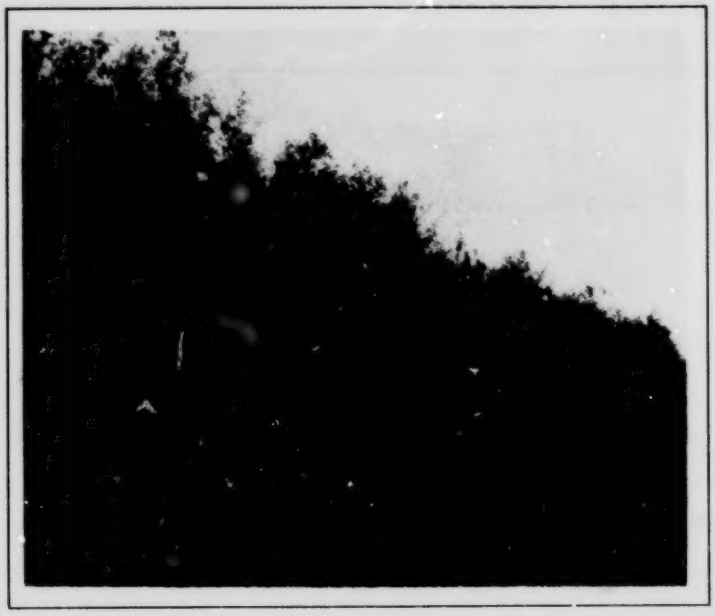
Present Land Owner : *Private* **Present Vigor :** *Very good*

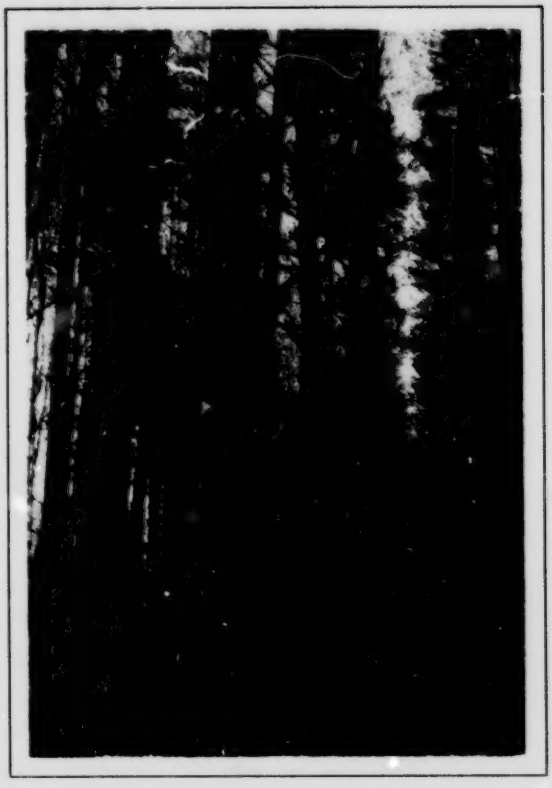
Former Stand Type : *Agriculture*

Total Volume : *453 m^3/ha (64.7 cu/ac)*
MAI : *11.3 m^3/ha (1.62 cu/ac)*

Merchantable Volume : *425 m^3/ha (60.7 cu/ac)*
MAI : *10.6 m^3/ha (1.52 cu/ac)*

Remarks : *Very good form for Scots pine.*





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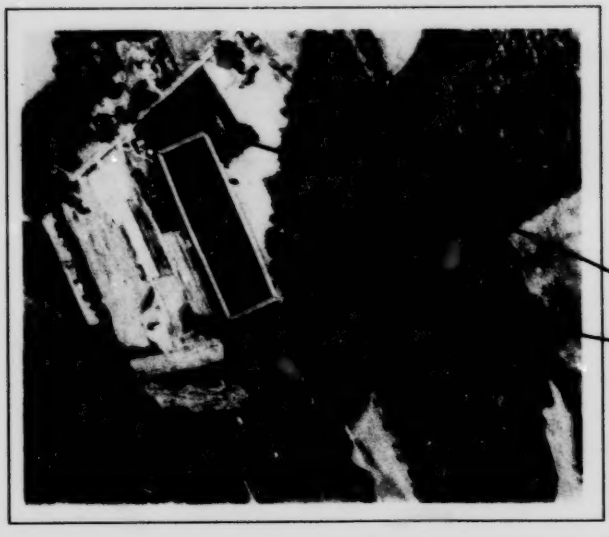

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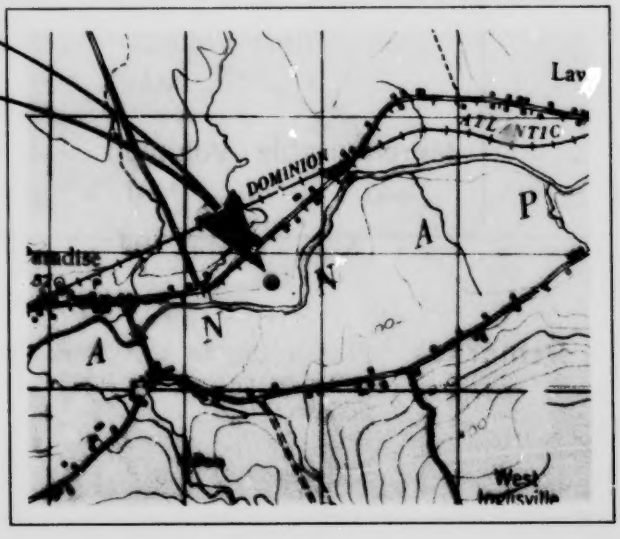


N.S. 2

Plantation Record

Species: *Red Pine (Pinus resinosa Ait.)*

Plantation # *N.S. 3* **Provincial Reference:** *P-0398*

Location: *Lorne, Pictou County*

National Topographic Map # *11 E/7* **Grid Reference:** *229305*

Aerial Photo # *79301-94*

Date of Survey: *09/06/83* **Size of Plantation:** *0.7 ha*

Date of Planting: *1948* **Present Density:** *4035 Stems/ha*

Age When Surveyed: *35* **Average D.B.H.:** *14.8 cm*

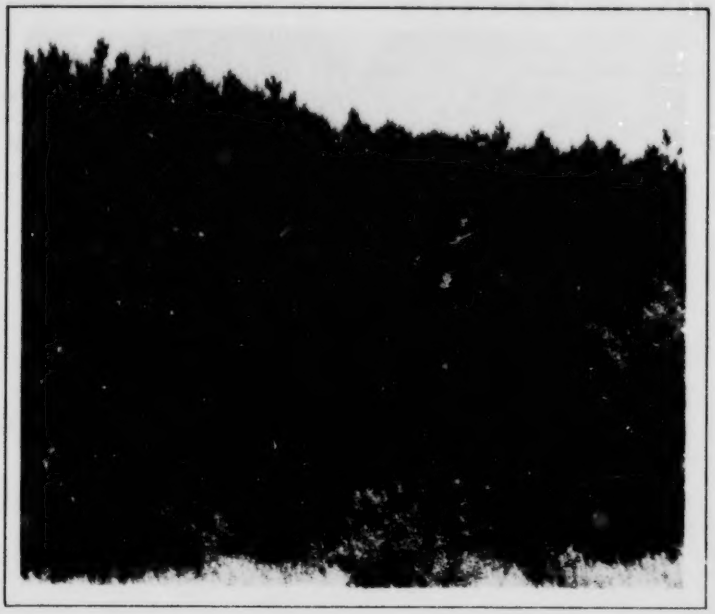
Planting Agency: *Private* **Average Height:** *13.9 m*

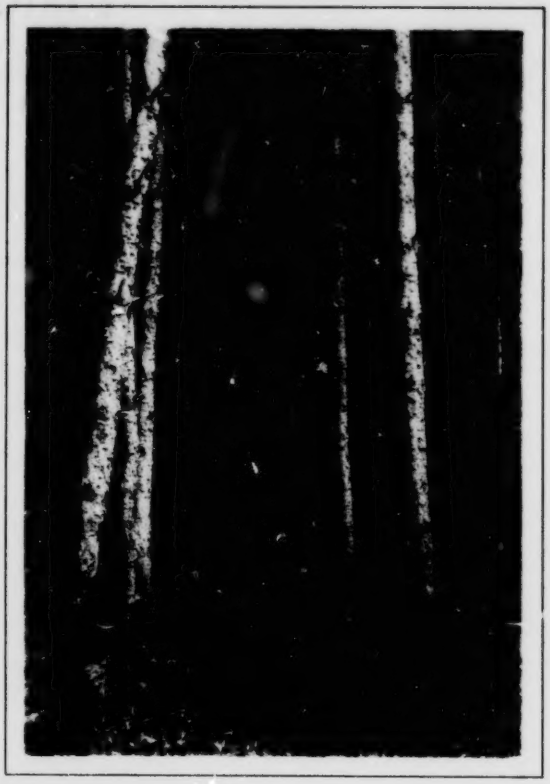
Present Land Owner: *Private* **Present Vigor:** *Fair*

Former Stand Type: *Agriculture*

Total Volume:	*401*	m^3/ha *(57.4 cu/ac)*
MAI:	*11.5*	m^3/ha *(1.64 cu/ac)*
Merchantable Volume:	*347*	m^3/ha *(49.7 cu/ac)*
MAI:	*9.9*	m^3/ha *(1.42 cu/ac)*

Remarks: *Plantation is too dense, although natural thinning is now occurring, earlier treatment would have resulted in a greater current merchantable volume.*





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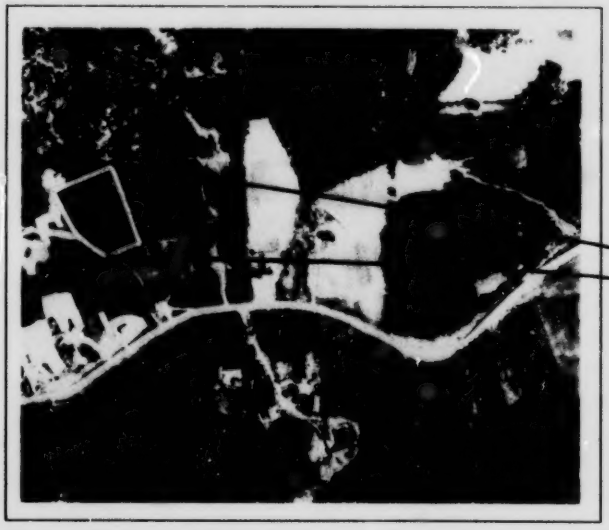

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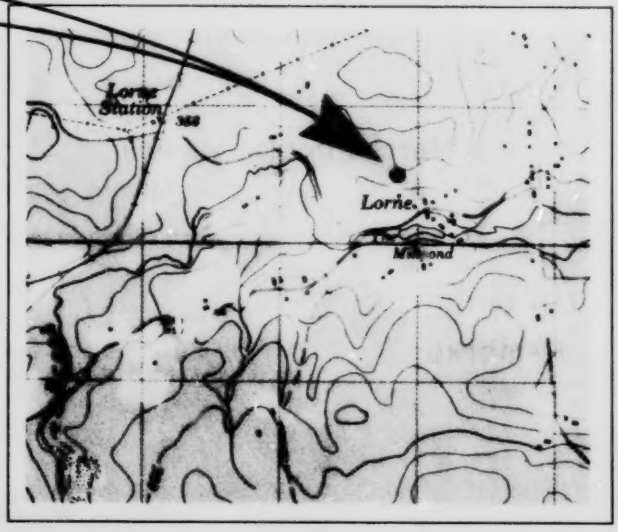

N.S. 3

Plantation Record

Species: *Scots Pine*

Plantation # *N.S. 4* **Provincial Reference:** *P-0400*

Location: *Lorne, Pictou County*

National Topographic Map # *11 E/7* **Grid Reference:** *232304*

Aerial Photo # *79301-94*

Date of Survey: *09/06/83* **Size of Plantation:** *0.15 ha*

Date of Planting: *1928* **Present Density:** *925 Stems/ha*

Age When Surveyed: *55* **Average D.B.H.:** *32.5 cm*

Planting Agency: *Private* **Average Height:** *21.4 m*

Present Land Owner: *Private* **Present Vigor:** *Fair*

Former Stand Type: *Agriculture*

Total Volume: *673 m^3/ha (96. 3 cu/ac)*

MAI: *12.2 m^3/ha (1.75 cu/ac)*

Merchantable Volume: *641 m^3/ha (91.6 cu/ac)*

MAI: *11.7 m^3/ha (1.67 cu/ac)*

Remarks: *Growing on southerly exposure with 15% slope. All trees are leaning towards the south east .*

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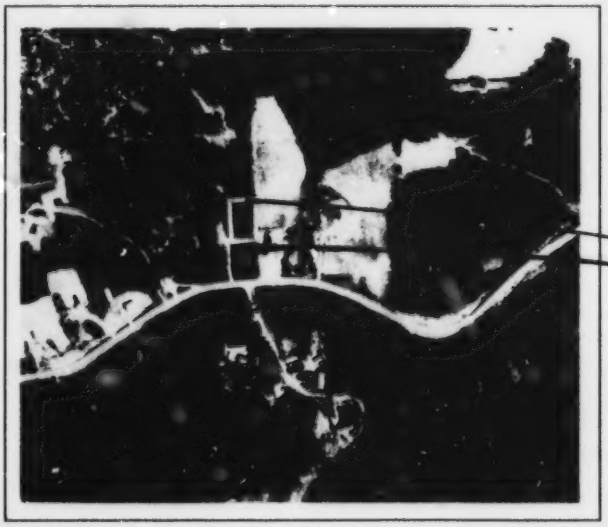

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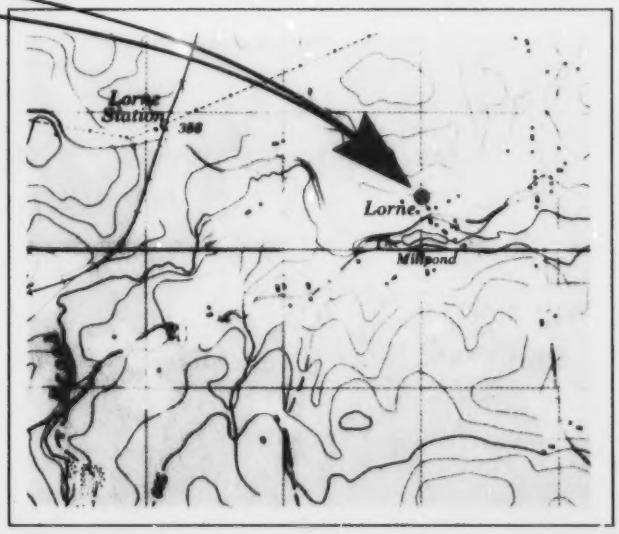

N.S. 4

Plantation Record

Species: *Red Pine*

Plantation # *N.S. 5* Provincial Reference: *P-0974*

Location: *Chignecto Game Sanctuary, Cumberland County*

National Topographic Map # *21 H/9* Grid Reference: *943515*

Aerial Photo # *75051-22*

Date of Survey: *05/07/83* Size of Plantation: *1.4 ha*

Date of Planting: *1946* Present Density: *480 Stems/ha*

Age When Surveyed: *38* Average D.B.H.: *25.4 cm*

Planting Agency: *Government* Average Height: *15.7 m*

Present Land Owner: *Province of N.S.* Present Vigor: *Very good*

Former Stand Type: *Fire*

Total Volume:	*169*	m^3/ha *(24.1 cu/ac)*
MAI:	*4.4*	m^3/ha *(0.63 cu/ac)*
Merchantable Volume:	*159*	m^3/ha *(22.7 cu/ac)*
MAI:	*4.2*	m^3/ha *(0.60 cu/ac)*

Remarks: *Over one-half of the original stems have been removed by thinning.*

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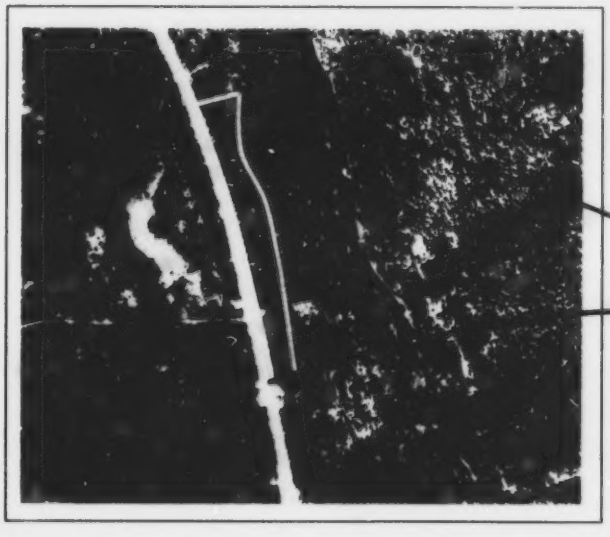

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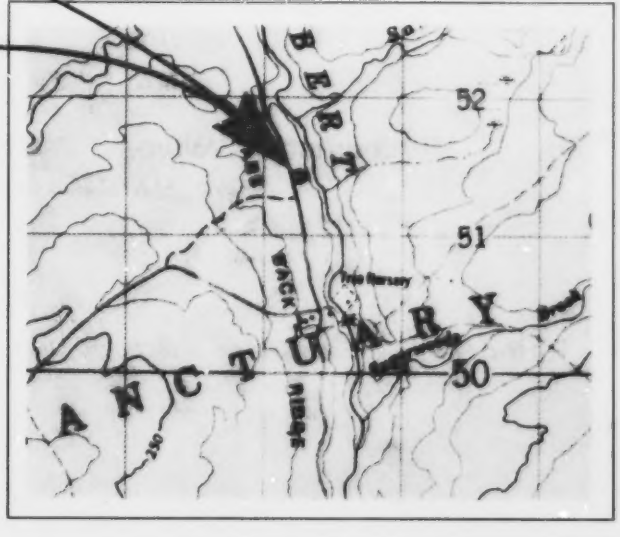


N.S. 5

Plantation Record

Species : *Red Pine*

Plantation # *N.S. 6* **Provincial Reference :** *P-0978*

Location : *Chignecto Game Sanctuary, Cumberland County*

National Topographic Map # *21 H/9* **Grid Reference :** *944511*

Aerial Photo # *75051-22*

Date of Survey: *05/07/83* **Size of Plantation:** *0.35 ha*

Date of Planting: *1943* **Present Density :** *1115 Stems/ha*

Age When Surveyed: *41* **Average D.B.H. :** *22.2 cm*

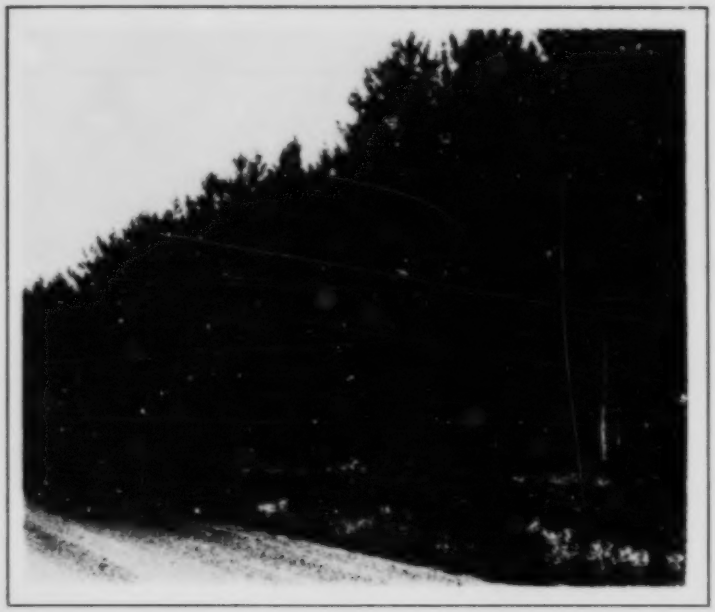
Planting Agency : *Government* **Average Height :** *16.1 m*

Present Land Owner : *Province of N.S.* **Present Vigor :** *Very good*

Former Stand Type : *Fire*

Total Volume :	*293* m^3*/ha*	*(42.0 cu/ac)*
MAI :	*7.1* m^3*/ha*	*(1.02 cu/ac)*
Merchantable Volume :	*273* m^3*/ha*	*(39.1 cu/ac)*
MAI :	*6.6* m^3*/ha*	*(0.95 cu/ac)*

Remarks : *Plantation has been thinned and pruned .*



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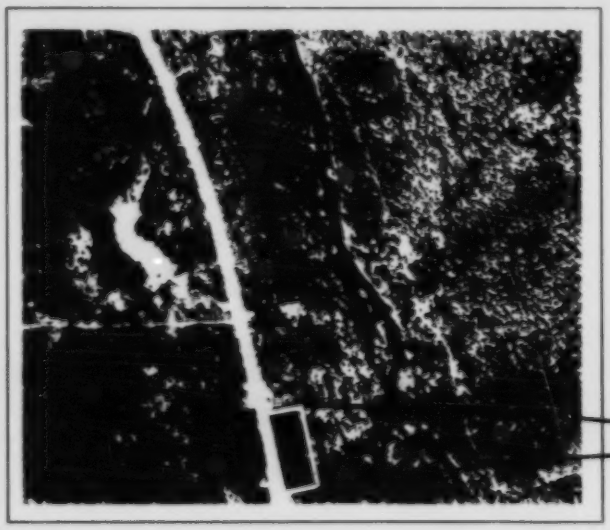

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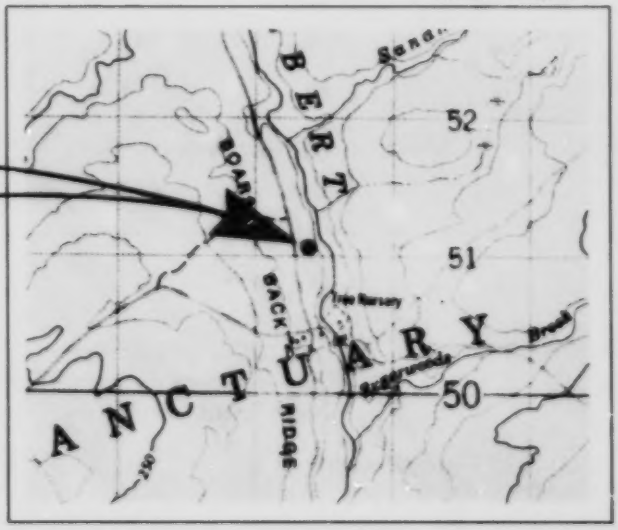


N.S. 6

Plantation Record

Species: *Red Pine*

Plantation # *N.S. 7* **Provincial Reference:** *P-1022*

Location: *Chignecto Game Sanctuary, Cumberland County*

National Topographic Map # *21 H/9* **Grid Reference:** *943505*

Aerial Photo # *75051-22*

Date of Survey: *05/07/83* **Size of Plantation:** *0.3 ha*

Date of Planting: *1940* **Present Density:** *930 Stems/ha*

Age When Surveyed: *44* **Average D.B.H.:** *25.5 cm*

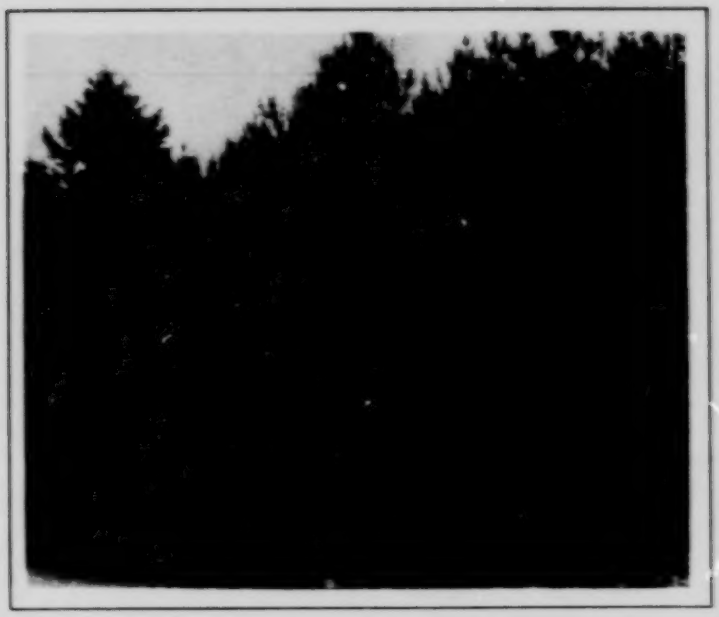
Planting Agency: *Government* **Average Height:** *16.2 m*

Present Land Owner: *Province of N.S.* **Present Vigor:** *Good*

Former Stand Type: *Fire*

Total Volume:	*344* m^3*/ha*	*(49.3 cu/ac)*
MAI:	*7.8* m^3*/ha*	*(1.12 cu/ac)*
Merchantable Volume:	*325* m^3*/ha*	*(46.5 cu/ac)*
MAI:	*7.4* m^3*/ha*	*(1.06 cu/ac)*

Remarks: *Planting stock composed of 25 to 30% Norway spruce which is now suppressed with a DBH of less than 10 cm and does not make a significant contribution to the present volume.*



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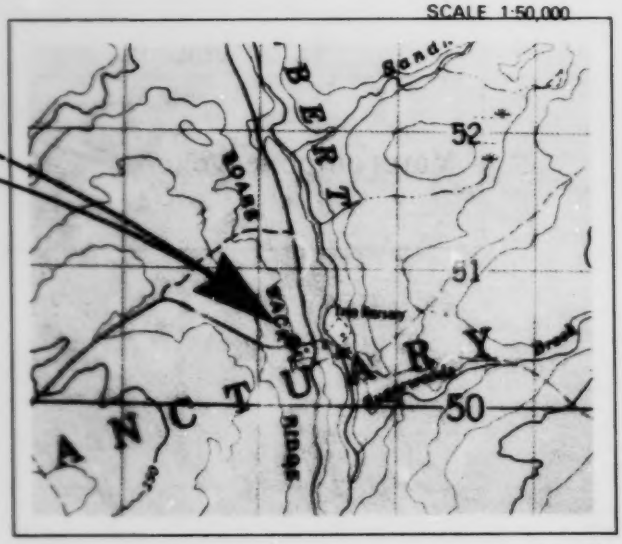


N.S. 7

Plantation Record

Species: *Red Pine*

Plantation # *N.S. 8* **Provincial Reference:** *P-0571*

Location: *Centerdale, Pictou County*

National Topographic Map # *11 E/7* **Grid Reference:** *272283*

Aerial Photo # *79313-113*

Date of Survey: *06/07/83* **Size of Plantation:** *0.7 ha*

Date of Planting: *1939* **Present Density:** *1720 Stems/ha*

Age When Surveyed: *45* **Average D.B.H.:** *19.9 cm*

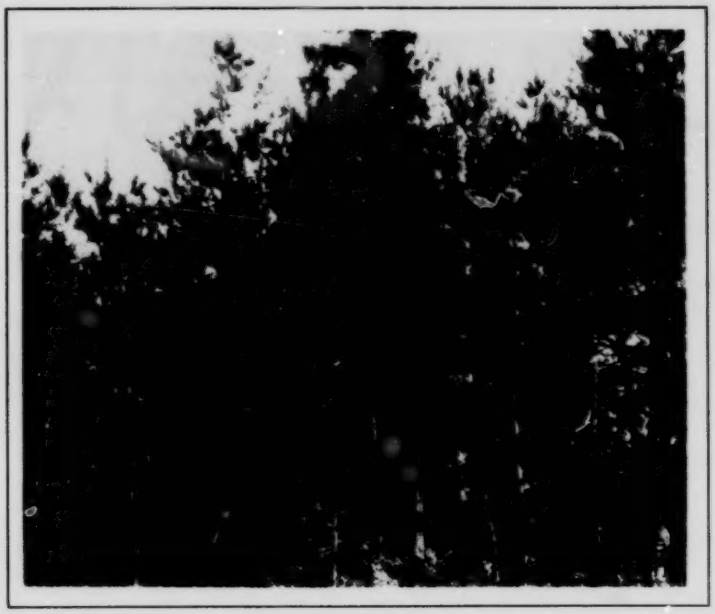
Planting Agency: *Private* **Average Height:** *18.1 m*

Present Land Owner: *Private* **Present Vigor:** *Good*

Former Stand Type: *Agriculture*

Total Volume:	*374* m^3/ha	*(53. 5 cu/ac)*
MAI:	*8.3* m^3/ha	*(1.19 cu/ac)*
Merchantable Volume:	*342* m^3/ha	*(48.9 cu/ac)*
MAI:	*7.6* m^3/ha	*(1.09 cu/ac)*

Remarks:



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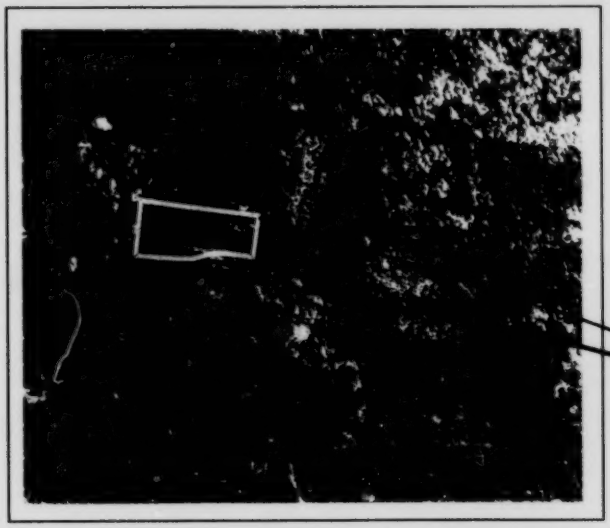

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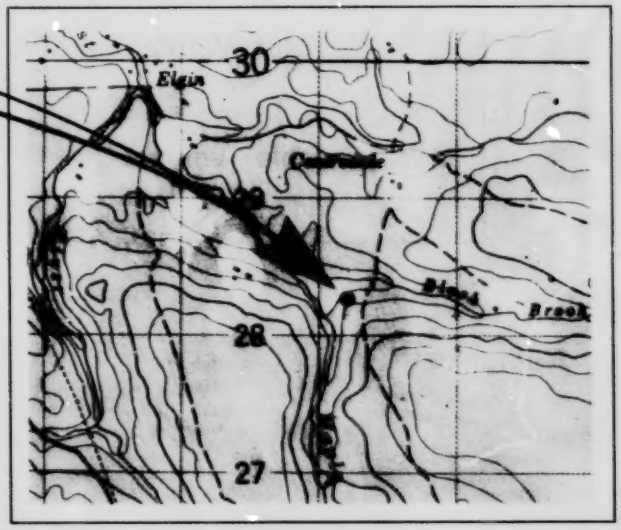


N.S. 8

Plantation Record

Species: *Norway Spruce (Picea abies (L.) Karst.)*

Plantation # *N.S. 9* **Provincial Reference:** *P-0574*

Location: *Centerdale, Pictou County*

National Topographic Map # *11 E/7* **Grid Reference:** *273282*

Aerial Photo # *79313-113*

Date of Survey: *06/07/83* **Size of Plantation:** *<0.1 ha*

Date of Planting: *1940* **Present Density:** *1575 Stems/ha*

Age When Surveyed: *44* **Average D.B.H.:** *22.5 cm*

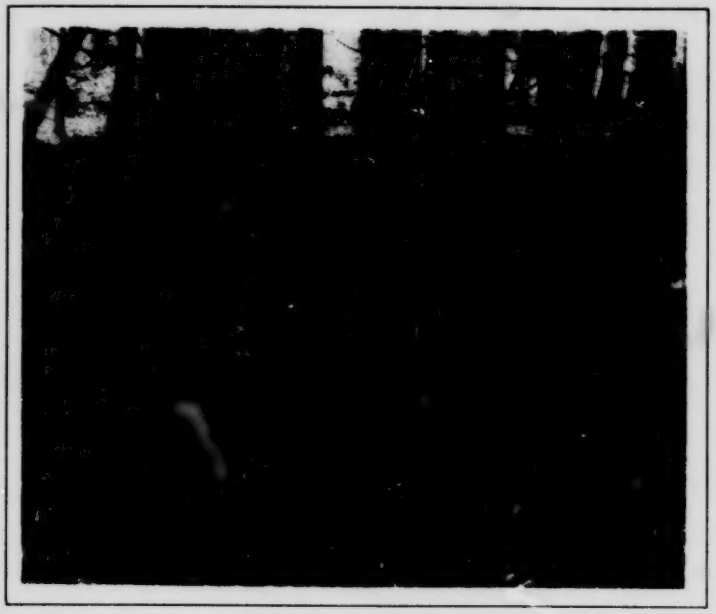
Planting Agency: *Private* **Average Height:** *19.4 m*

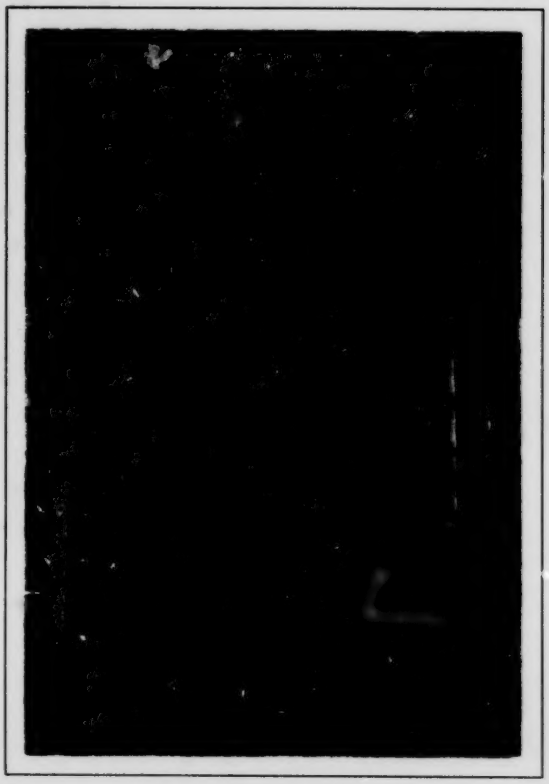
Present Land Owner: *Private* **Present Vigor:** *Very good*

Former Stand Type: *Agriculture*

Total Volume:	*413* m^3*/ha*	*(59.1 cu/ac)*
MAI:	*9.4* m^3*/ha*	*(1.34 cu/ac)*
Merchantable Volume:	*382* m^3*/ha*	*(54.6 cu/ac)*
MAI:	*8.7* m^3*/ha*	*(1.24 cu/ac)*

Remarks:





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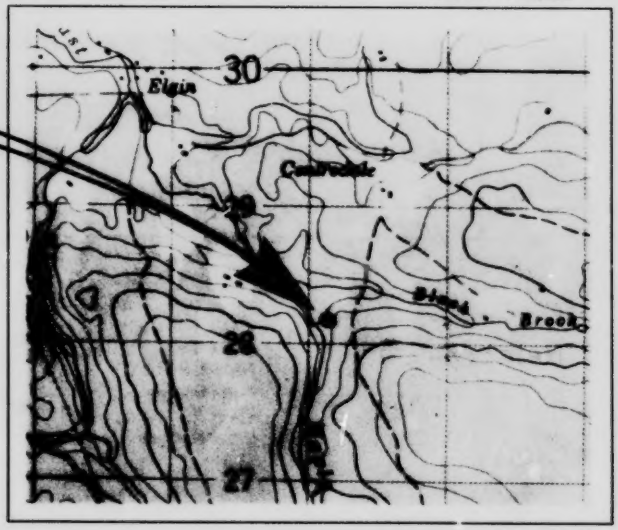


N.S. 9

Plantation Record

Species: *Scots Pine*

Plantation # *N.S. 10* **Provincial Reference:** *N/A*

Location: *Lorne, Pictou County*

National Topographic Map # *11 E/7* **Grid Reference:** *235302*

Aerial Photo # *79301-93*

Date of Survey: *06/07/83* **Size of Plantation:** *0.4 ha*

Date of Planting: *1932* **Present Density:** *437 Stems/ha*

Age When Surveyed: *52* **Average D.B.H.:** *29.1 cm*

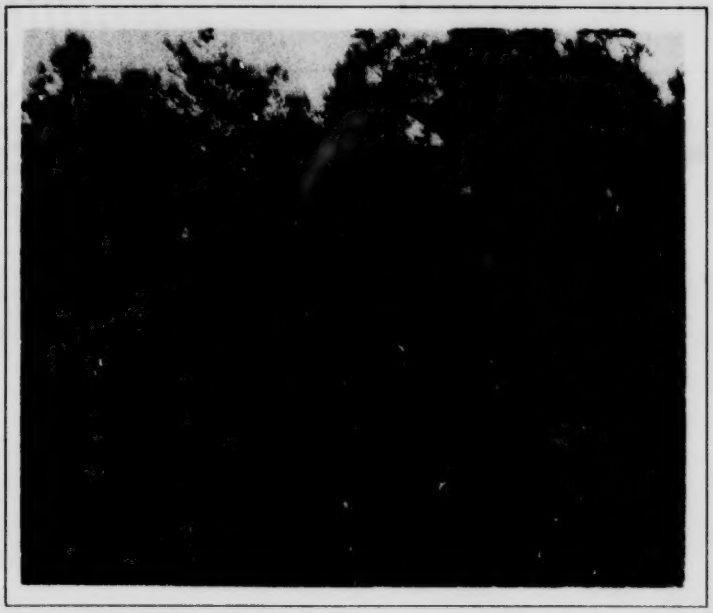
Planting Agency: *Private* **Average Height:** *21.9 m*

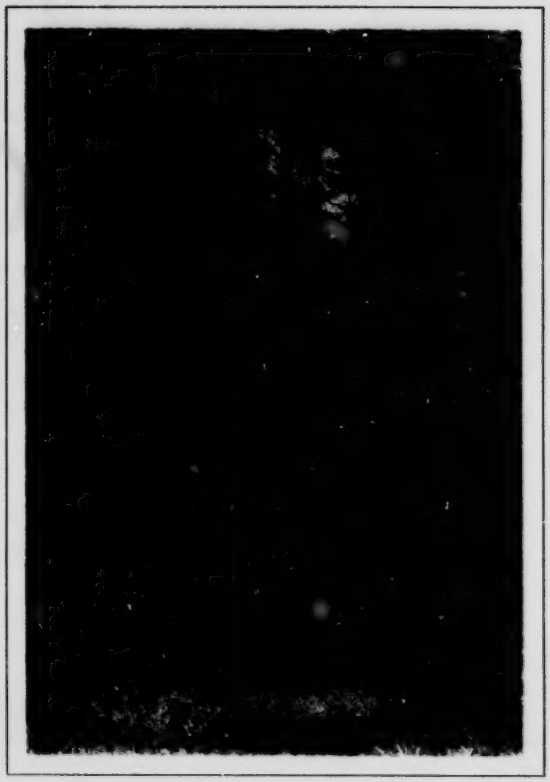
Present Land Owner: *Private* **Present Vigor:** *Very good*

Former Stand Type: *Agriculture*

Total Volume:	*286*	m^3/ha *(40.9 cu/ac)*
MAI:	*5.5*	m^3/ha *(0.79 cu/ac)*
Merchantable Volume:	*272*	m^3/ha *(38.9 cu/ac)*
MAI:	*5.2*	m^3/ha *(0.75 cu/ac)*

Remarks: *Plantation also contains 30 m^3/ha of white pine.*





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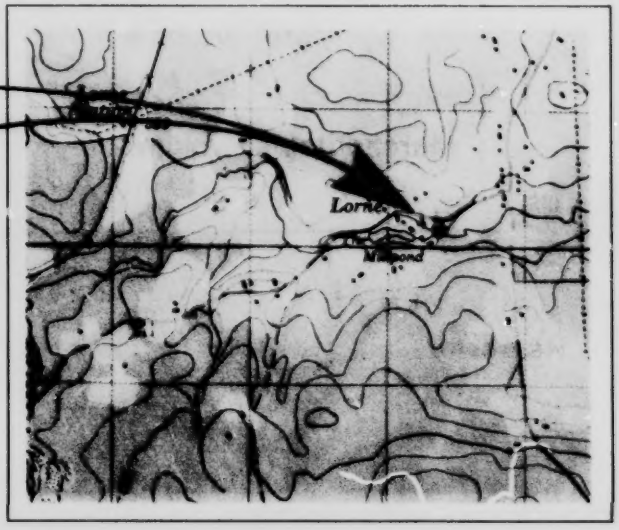

N.S. 10

Plantation Record

Species : *Red Pine & Scots Pine*

Plantation # *N.S. 11* Provincial Reference : *P-0489*

Location : *Lorne, Pictou County*

National Topographic Map # *11 E/7* Grid Reference : *219306*

Aerial Photo # *79301/94*

Date of Survey : *07/07/83* Size of Plantation : *0.4 ha*

Date of Planting : *1940* Present Density : *1560 Stems/ha*

Age When Surveyed : *44* Average D.B.H. : *21.3 cm*

Planting Agency : *Private* Average Height : *19.7 m*

Present Land Owner : *Private* Present Vigor : *Very good*

Former Stand Type : *Agriculture*

Total Volume :	433 m^3/ha	(61.9 cu/ac)
MAI :	9.8 m^3/ha	(1.41 cu/ac)
Merchantable Volume :	401 m^3/ha	(57.3 cu/ac)
MAI :	9.1 m^3/ha	(1.30 cu/ac)

Remarks :

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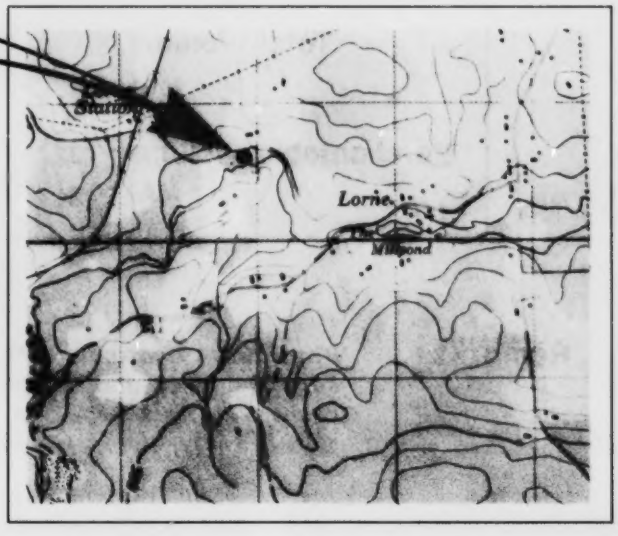

N.S. 11

Plantation Record

Species: *Scots Pine & Red Pine*

Plantation # *N.S. 12* **Federal Reference:** *P-0485*

Location: *Lorne, Pictou County*

National Topographic Map # *11 E/7* **Grid Reference:** *217306*

Aerial Photo # *79301-94*

Date of Survey: *07/07/83* **Size of Plantation:** *0.7 ha*

Date of Planting: *1938* **Present Density:** *1700 Stems/ha*

Age When Surveyed: *46* **Average D.B.H.:** *20.5 cm*

Planting Agency: *Private* **Average Height:** *19.4 m*

Present Land Owner: *Private* **Present Vigor:** *Very good*

Former Stand Type: *Agriculture*

Total Volume: *406 m^3/ha (58.0 cu/ac)*
MAI: *8.8 m^3/ha (1.26 cu/ac)*

Merchantable Volume: *371 m^3/ha (53.1 cu/ac)*
MAI: *8.1 m^3/ha (1.15 cu/ac)*

Remarks: *Plantation contains about 400 stems/ha (53 m^3/ha) of suppressed Norway spruce and a few Douglas-fir* (Pseudotsuga menziesii *(Mirb.) Franco). These species are not included in the volume estimate.*

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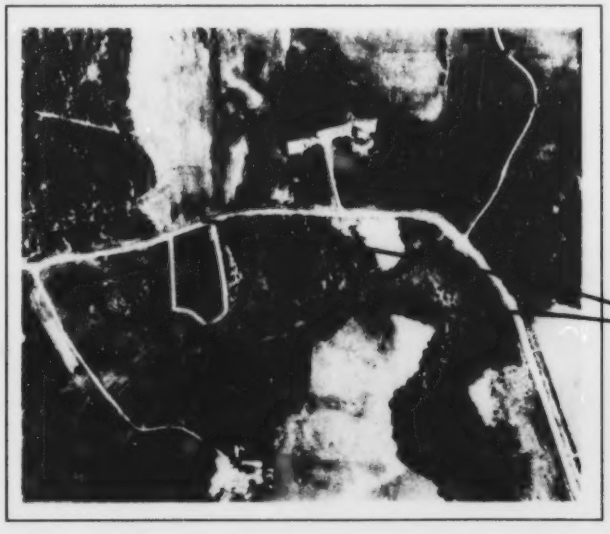

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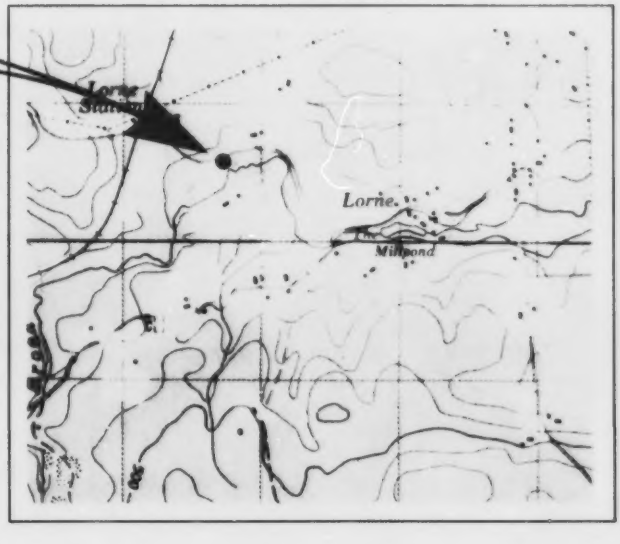


N.S. 12

Plantation Record

Species: *Red Pine*

Plantation # *N.S. 13* **Provincial Reference:** *N/A*

Location: *Chignecto Game Sanctuary, Cumberland County*

National Topographic Map # *21 H/9* **Grid Reference:** *944466*

Aerial Photo # *75053-113*

Date of Survey: *08/07/83* **Size of Plantation:** *1.5 ha*

Date of Planting: *1940* **Present Density:** *[illegible] Stems/ha*

Age When Surveyed: *44* **Average D.B.H.:** *[illegible] cm*

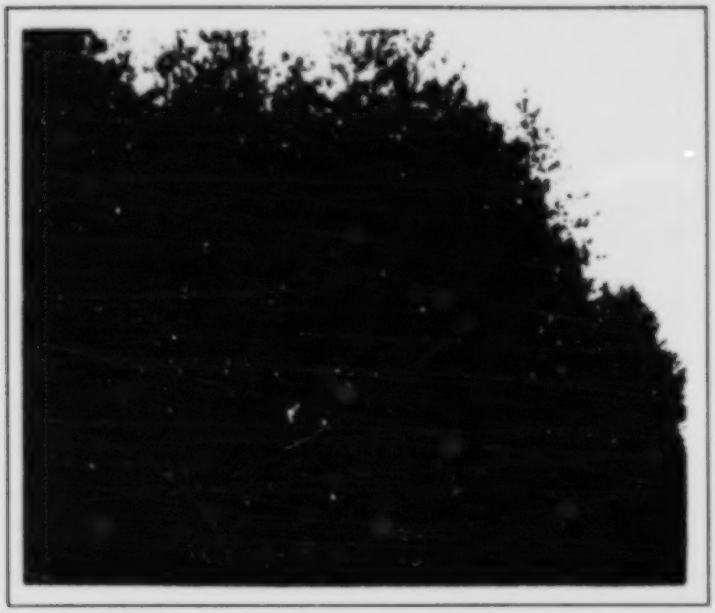
Planting Agency: *Government* **Average Height:** *[illegible] m*

Present Land Owner: *Province of N.S.* **Present Vigor:** *Very good*

Former Stand Type: *Fire*

Total Volume:	*289*	m^3/ha *(41.3 cu/ac)*
MAI:	*6.6*	m^3/ha *(0.94 cu/ac)*
Merchantable Volume:	*272*	m^3/ha *(38.9 cu/ac)*
MAI:	*6.2*	m^3/ha *(0.88 cu/ac)*

Remarks: *Norway spruce was originally planted in alternate rows, but is now suppressed and does not form a significant portion of the volume.*



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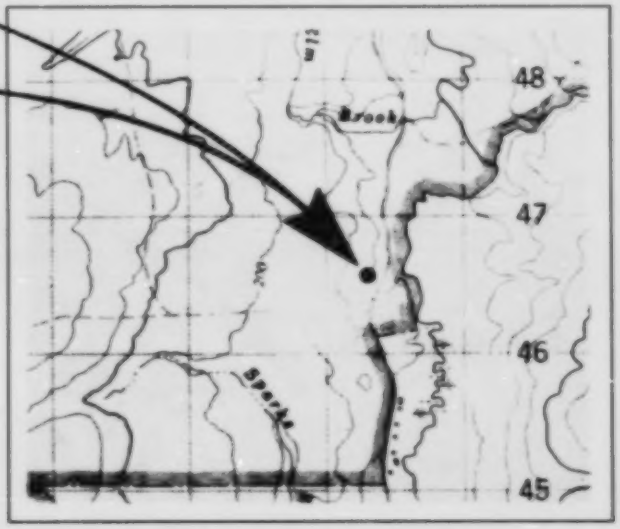


N.S. 13

Plantation Record

Species : *Red Pine*

Plantation # *N.S. 14* Provincial Reference : *P-0948*

Location : *Chignecto Game Sanctuary, Cumberland County*

National Topographic Map # *21 H/9* Grid Reference : *944500*

Aerial Photo # *75051-58*

Date of Survey : *08/07/83* Size of Plantation : *0.15 ha*

Date of Planting : *1939* Present Density : *1595 Stems/ha*

Age When Surveyed : *45* Average D.B.H. : *21.3 cm*

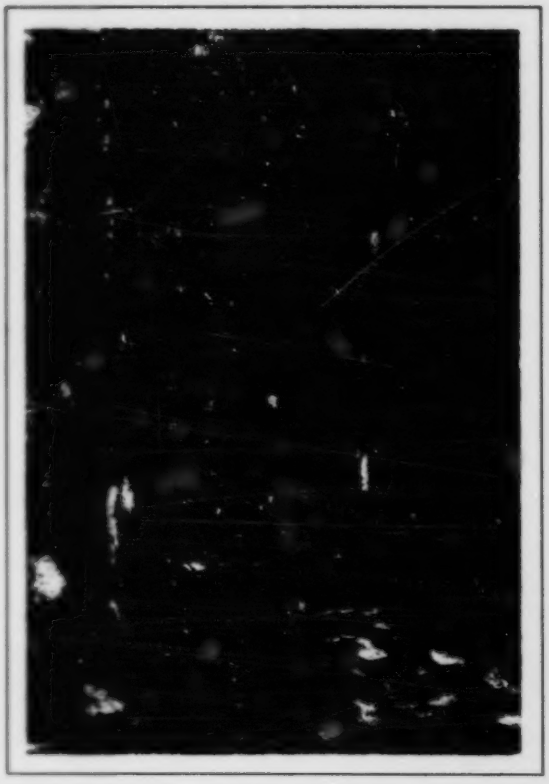
Planting Agency : *Government* Average Height : *14.1 m*

Present Land Owner : *Province of N.S.* Present Vigor : *Very good*

Former Stand Type : *Fire*

Total Volume :	*340* m^3*/ha*	*(48.7 cu/ac)*
MAI :	*7.6* m^3*/ha*	*(1.08 cu/ac)*
Merchantable Volume :	*316* m^3*/ha*	*(45.2 cu/ac)*
MAI :	*7.0* m^3*/ha*	*(1.00 cu/ac)*

Remarks :



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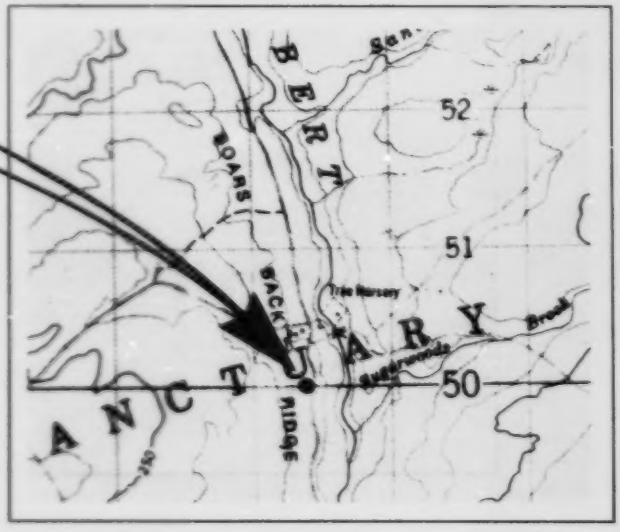


N.S. 14

Selected Older Plantations in PRINCE EDWARD ISLAND

Plantation Record

Species : *Red Pine*

Plantation # *P.E.I. 1* **Federal Reference :** *N/A*

Location : *Stanhope National Park, Queens County*

National Topographic Map # *11 L/6* **Grid Reference :** *939397*

Aerial Photo # *A26090/151*

Date of Survey : *03/02/83* **Size of Plantation :** *1.4 ha*

Date of Planting : *1958* **Present Density :** *2400 Stems/ha*

Age When Surveyed : *25* **Average D.B.H. :** *17.3 cm*

Planting Agency : *Parks Canada* **Average Height :** *10.3 m*

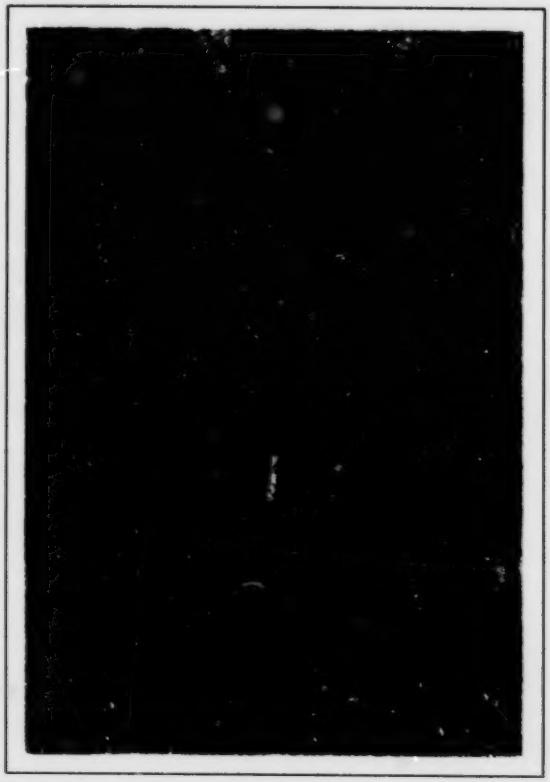
Present Land Owner : *Federal* **Present Vigor :** *Fair*

Former Stand Type : *Agriculture*

Total Volume : *254 m^3/ha (36.3 cu/ac)*
MAI : *10.2 m^3/ha (1.45 cu/ac)*

Merchantable Volume : *227 m^3/ha (32.5 cu/ac)*
MAI : *9.1 m3/ha (1.30 cu/ac)*

Remarks : *Plantation has been lightly thinned.*



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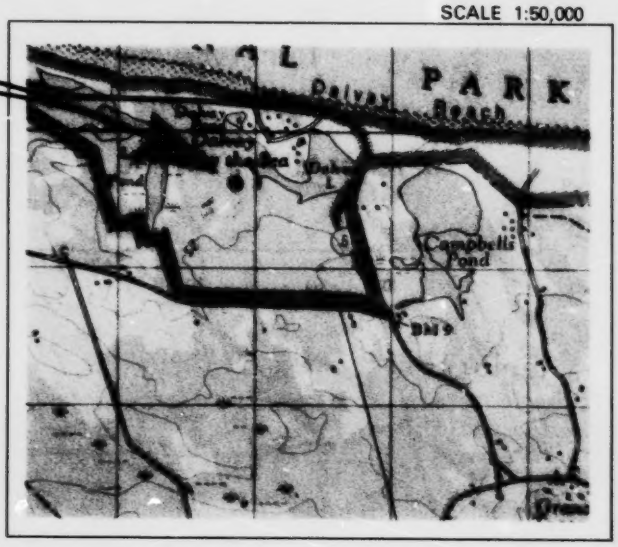


P.E.I. 1

Plantation Record

Species : *Red Pine*

Plantation # *P.E.I. 2* Provincial Reference : *N/A*

Location : *48 Road, Kings County*

National Topographic Map # *11L/7* Grid Reference : *231224*

Aerial Photo # *80416-217*

Date of Survey : *02/02/83* Size of Plantation : *0.6/ha*

Date of Planting : *1951* Present Density : *1230 Stems/ha*

Age When Surveyed : *32* Average D.B.H. : *22.3 cm*

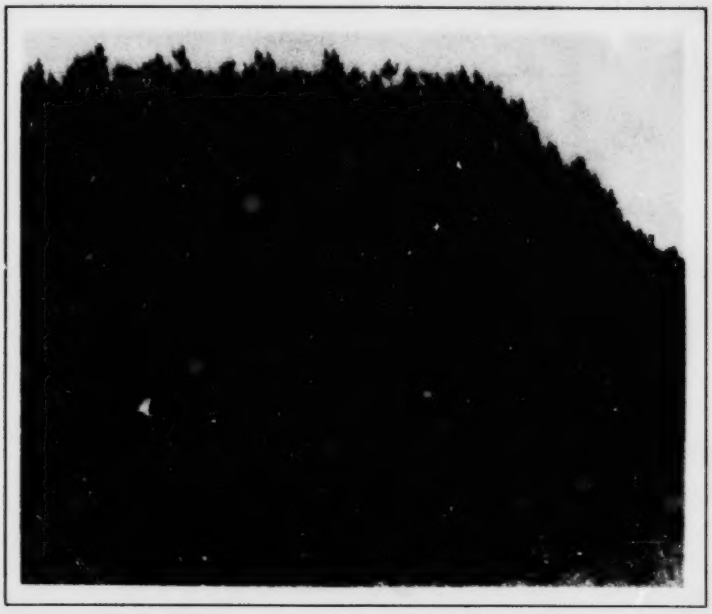
Planting Agency : *Unknown* Average Height : *13.0 m*

Present Land Owner : *Private* Present Vigor : *Very good*

Former Stand Type : *Agriculture*

Total Volume :	267 m^3/ha	(38.3 cu/ac)
MAI :	8.3 m^3/ha	(1.20 cu/ac)
Merchantable Volume :	249 m^3/ha	(35.7 cu/ac)
MAI :	7.8 m^3/ha	(1.12 cu/ac)

Remarks :



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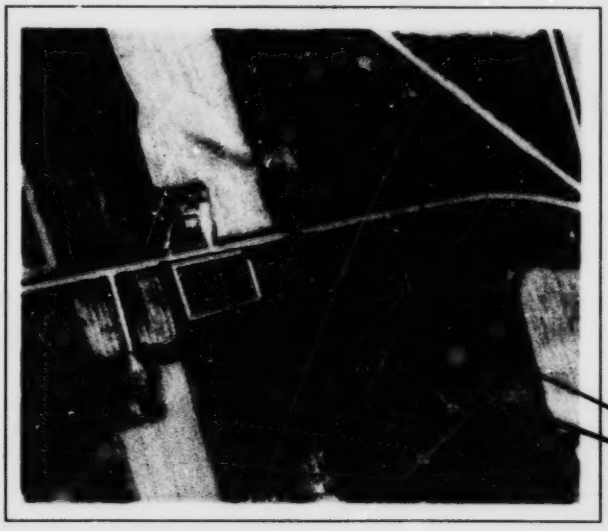

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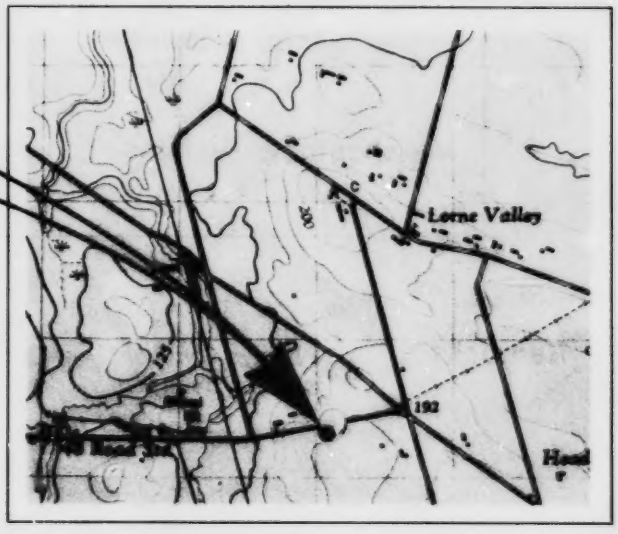

P.E.I. 2

Plantation Record

Species: *Red Pine*

Plantation # *P.E.I. 3* **Provincial Reference:** *N/A*

Location: *Selkirk Road, Queens County*

National Topographic Map # *11L/2* **Grid Reference:** *164997*

Aerial Photo # *80400-219*

Date of Survey: *01/02/83* **Size of Plantation:** *0.3 ha*

Date of Planting: *1949* **Present Density:** *1700 Stems/ha*

Age When Surveyed: *34* **Average D.B.H.:** *19.9 cm*

Planting Agency: *Unknown* **Average Height:** *13.1 m*

Present Land Owner: *Private* **Present Vigor:** *Fair*

Former Stand Type: *Agriculture*

Total Volume:	*290* m^3*/ha*	*(41.4 cu/ac)*
MAI:	*8.5* m^3*/ha*	*(1.22 cu/ac)*
Merchantable Volume:	*266* m^3*/ha*	*(38.1 cu/ac)*
MAI:	*7.8* m^3*/ha*	*(1.12 cu/ac)*

Remarks: *Plantation has been thinned and pruned, additional thinning may be beneficial.*

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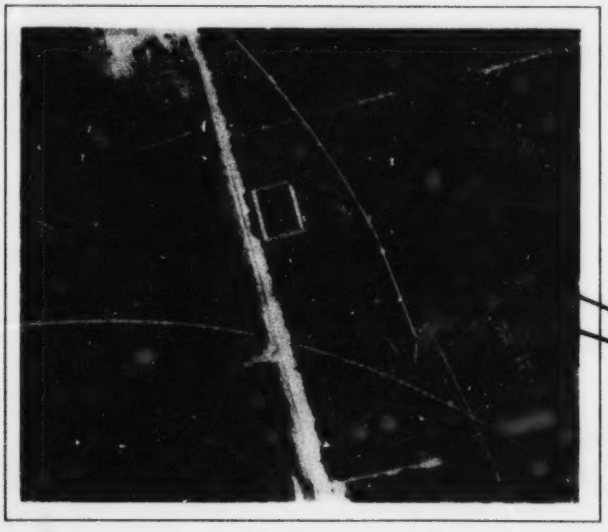

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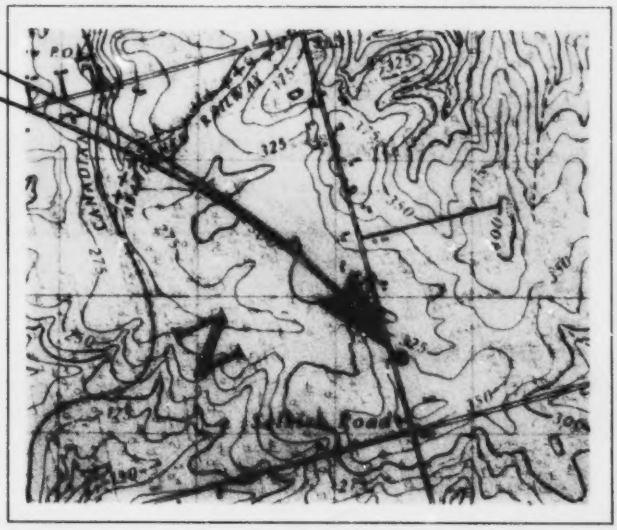
325
325
325

Plantation Record

Species: *Red Pine*

Plantation # *P.E.I. 4* **Provincial Reference:** *N/A*

Location: *Brudenell, Kings County*

National Topographic Map # *11L/2* **Grid Reference:** *331142*

Aerial Photo # *80402-246*

Date of Survey: *01/02/83* **Size of Plantation:** *0.7 ha*

Date of Planting: *1951* **Present Density:** *1860 Stems/ha*

Age When Surveyed: *32* **Average D.B.H.:** *20.0 cm*

Planting Agency: *Unknown* **Average Height:** *12.1 m*

Present Land Owner: *Private* **Present Vigor:** *Very good*

Former Stand Type: *Agriculture*

Total Volume:	*299* m^3*/ha*	*(42.8 cu/ac)*
MAI:	*9.3* m^3*/ha*	*(1.34 cu/ac)*
Merchantable Volume:	*275* m^3*/ha*	*(39.3 cu/ac)*
MAI:	*8.6* m^3*/ha*	*(1.23 cu/ac)*

Remarks: *Young Douglas-fir and Scots pine also planted on property.*

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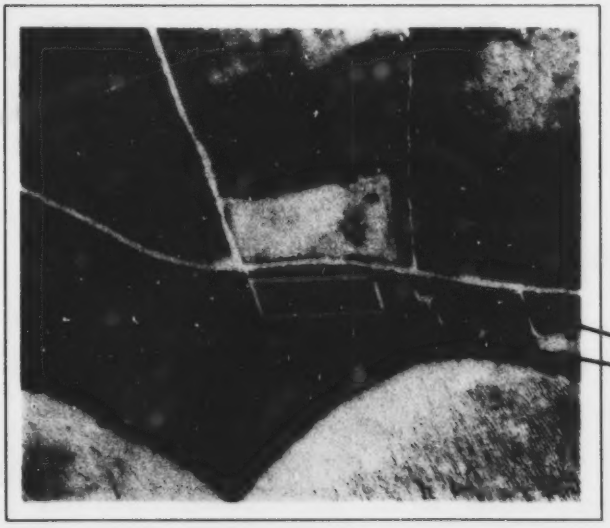

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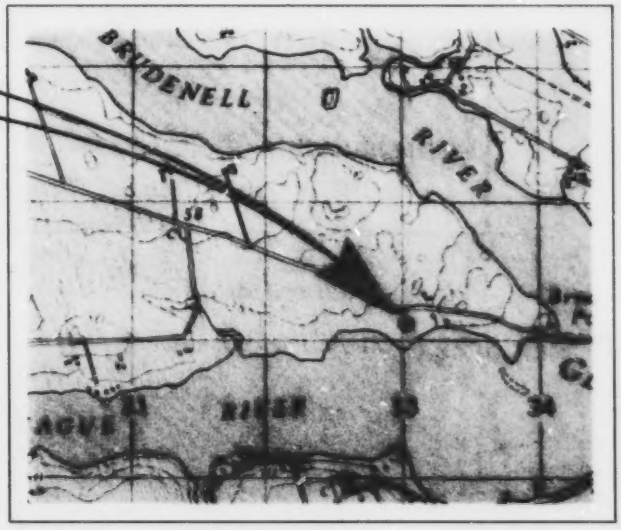


P.E.I. 4

Plantation Record

Species: *Red Pine*

Plantation # *P.E.I. 5* **Federal Reference:** *N/A*

Location: *Stanhope National Park, Queens County*

National Topographic Map # *11 L/6* **Grid Reference:** *949386*

Aerial Photo # *A26090-38*

Date of Survey: *03/02/83* **Size of Plantation:** *1.0 ha*

Date of Planting: *1948* **Present Density:** *3115 Stems/ha*

Age When Surveyed: *35* **Average D.B.H.:** *16.7 cm*

Planting Agency: *Parks Canada* **Average Height:** *13.3 m*

Present Land Owner: *Federal* **Present Vigor:** *Fair*

Former Stand Type: *Agriculture*

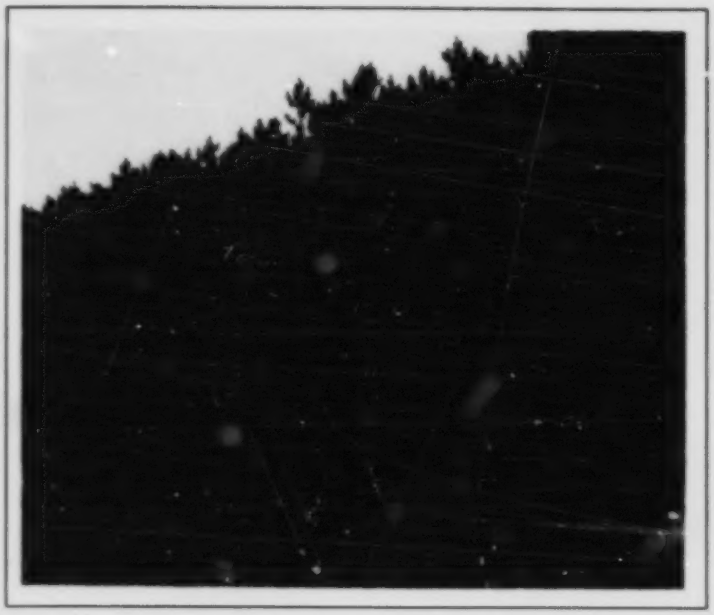
Total Volume: *393m^3/ha (56.2 cu/ac)*

MAI: *11.2m^3/ha (1.60 cu/ac)*

Merchantable Volume: *352m^3/ha (50.3 cu/ac)*

MAI: *10.1 m^3/ha (1.44 cu/ac)*

Remarks: *Requires thinning.*



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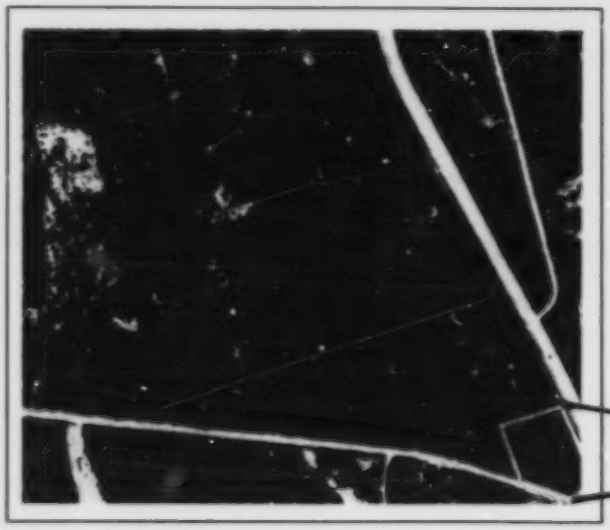

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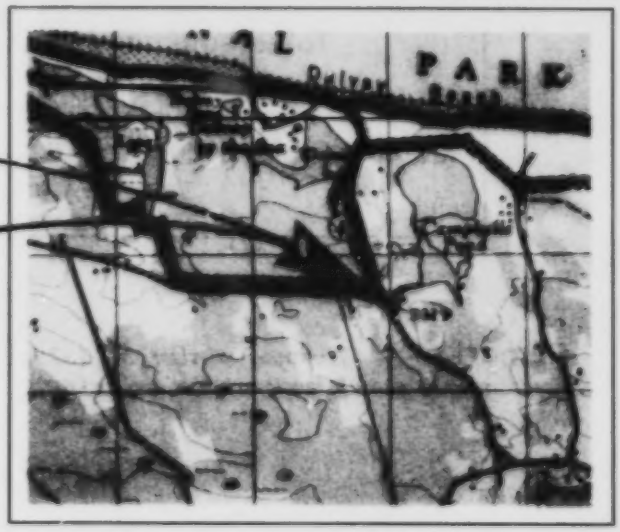

P.E.I. 5

Plantation Record

Species: *Red Pine*

Plantation # *P.E.I. 6* **Federal Reference:** *N/A*

Location: *Stanhope National Park, Queens County*

National Topographic Map # *11 L/6* **Grid Reference:** *944388*

Aerial Photo # *A26090-38*

Date of Survey: *03/02/83* **Size of Plantation:** *2.25 ha*

Date of Planting: *1946* **Present Density:** *1380 Stems/ha*

Age When Surveyed: *37* **Average D.B.H.:** *18.5 cm*

Planting Agency: *Parks Canada* **Average Height:** *13.8 m*

Present Land Owner: *Federal* **Present Vigor:** *Good*

Former Stand Type: *Agriculture*

Total Volume: *220 m^3/ha (31.6 cu/ac)*
MAI: *5.9 m^3/ha (0.85 cu/ac)*

Merchantable Volume: *200 m^3/ha (28.7 cu/ac)*
MAI: *5.4 m^3/ha (0.78 cu/ac)*

Remarks: *Thinned winter of 1979, every other row removed. 1982-growth shows some response to thinning.*

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P.E.I. 6

Plantation Record

Species : *Red Pine*

Plantation # *P.E.I. 7* **Federal Reference :** *N/A*

Location : *Stanhope National Park, Queens County*

National Topographic Map # *11 L/6* **Grid Reference :** *946392*

Aerial Photo # *A26090-38*

Date of Survey : *03/02/83* **Size of Plantation :** *0.45 ha*

Date of Planting : *1945* **Present Density :** *1538 Stem/ha*

Age When Surveyed : *38* **Average D.B.H. :** *23.3 cm*

Planting Agency : *Parks Canada* **Average Height :** *1.4 m*

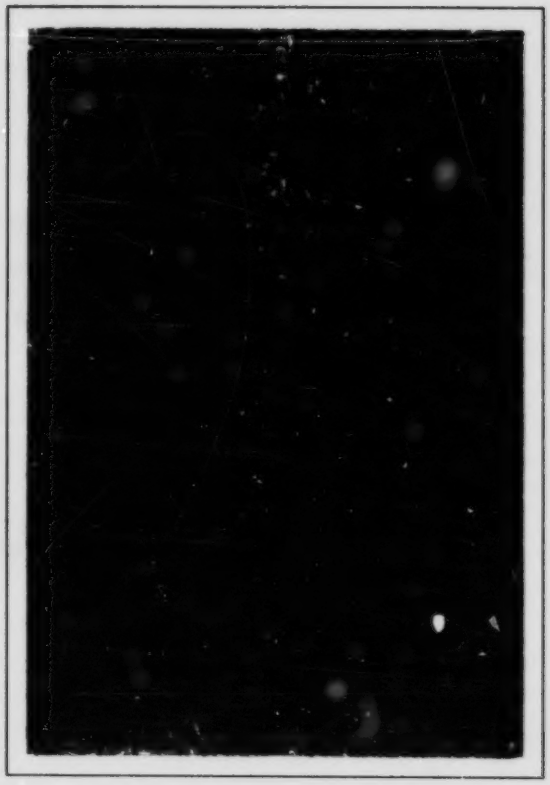
Present Land Owner : *Federal* **Present Vigor :** *Good*

Former Stand Type : *Agriculture*

Total Volume : *388 m^3/ha (55.5 cu/ac)*
MAI : *10.2 m^3/ha (1.46 cu/ac)*

Merchantable Volume : *362 m^3/ha (51.8 cu/ac)*
MAI : *9.5 m^3/ha (1.36 cu/ac)*

Remarks : *Growth has slowed in the past 10-15 years, requires a light thinning.*



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P.E.I. 7

Plantation Record

Species: *White Spruce*

Plantation # *P.E.I. 8* **Federal Reference:** *N/A*

Location: *Stanhope National Park, Queens County*

National Topographic Map # *11 L/6* **Grid Reference:** *947391*

Aerial Photo # *A26090-38*

Date of Survey: *03/02/83* **Size of Plantation:** *1.1 ha*

Date of Planting: *1945* **Present Density:** *1080 Stems/ha*

Age When Surveyed: *38* **Average D.B.H.:** *19.9 cm*

Planting Agency: *Parks Canada* **Average Height:** *11.6 m*

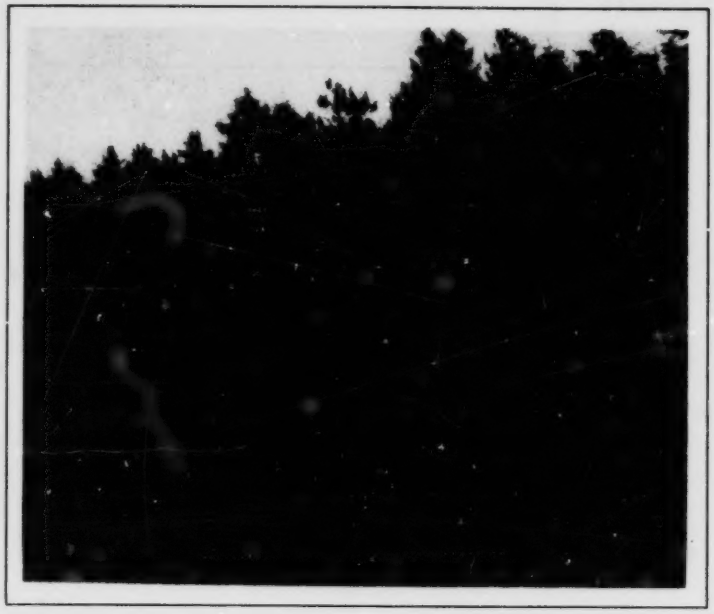
Present Land Owner: *Federal* **Present Vigor:** *Fair*

Former Stand Type: *Agriculture*

Total Volume: *167 m^3/ha (23.9 cu/ac)*
MAI: *4.4 m^3/ha (0.63 cu/ac)*

Merchantable Volume: *154 m^3/ha (22.1 cu/ac)*
MAI: *4.1 m^3/ha (0.58 cu/ac)*

Remarks: *Plantation is composed of a mixture of red pine, white spruce and some Norway spruce. The white and Norway spruce were inventoried as white spruce. The volume of red pine was 29m^3/ha, and is not included in the volume estimated. The combined spruce volume was 167 m^3/ha.*



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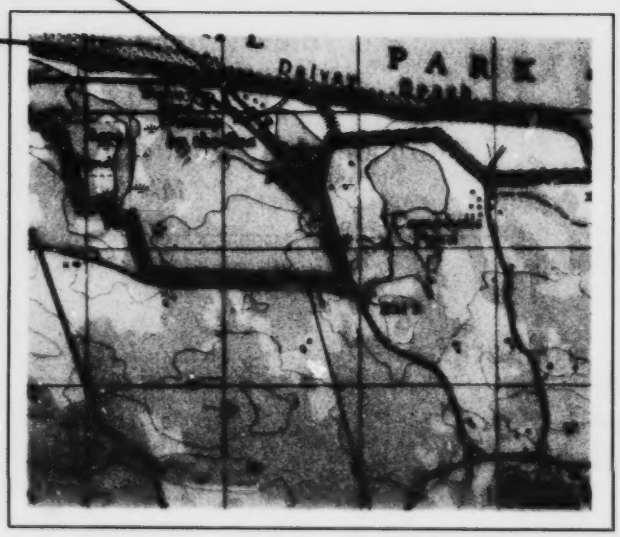


P.E.I. 8

Plantation Record

Species : *Red Pine*

Plantation # *P.E.I. 9* **Federal Reference :** *N/A*

Location : *Stanhope National Park, Queens County*

National Topographic Map # *11 L/6* **Grid Reference :** *944394*

Aerial Photo # *A26090-152*

Date of Survey : *02/02/83* **Size of Plantation :** *2.5 ha*

Date of Planting : *1947* **Present Density :** *900 Stems/ha*

Age When Surveyed : *36* **Average D.B.H. :** *20.8 cm*

Planting Agency : *Parks Canada* **Average Height :** *14.1 m*

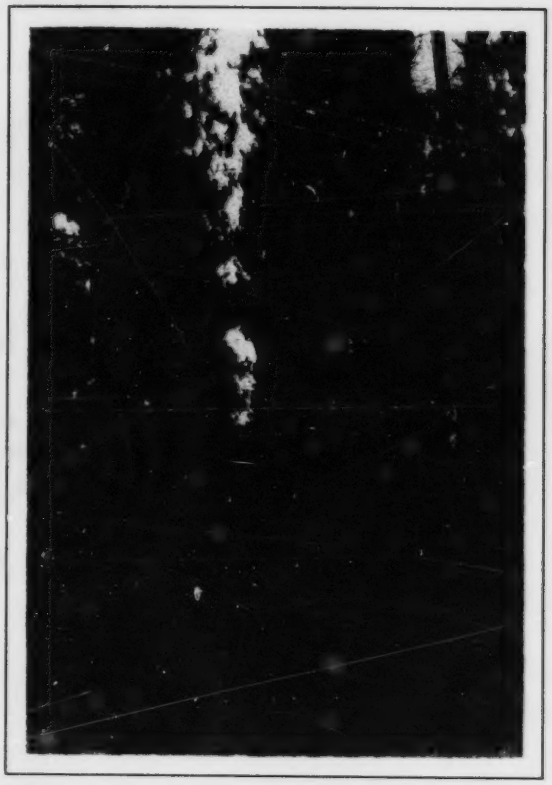
Present Land Owner : *Federal* **Present Vigor :** *Fair*

Former Stand Type : *Agriculture*

Total Volume : *187 m^3/ha (26.7 cu/ac)*
MAI : *5.2 m^3/ha (0.74 cu/ac)*

Merchantable Volume : *173 m^3/ha (24.8 cu/ac)*
MAI : *4.8 m^3/ha (0.69 cu/ac)*

Remarks : *Heavily thinned in 1980 by removing every other row.*



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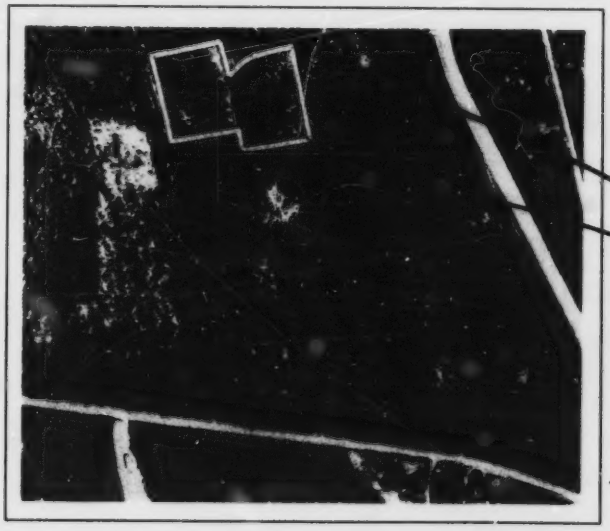

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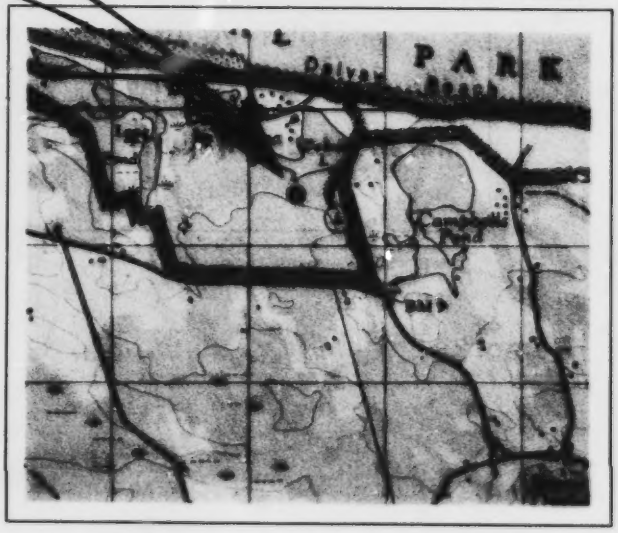

P.E.I. 9

Plantation Record

Species: *Red Pine*

Plantation # *P.E.I. 10* **Provincial Reference:** *N/A*

Location: *48 Road, Kings County*

National Topographic Map # *11L/7* **Grid Reference:** *232223*

Aerial Photo # *80416-217*

Date of Survey: *02/02/83* **Size of Plantation:** *1.3 ha*

Date of Planting: *1960* **Present Density:** 1030 Stems/Acre, 2550 Stems/ha

Age When Surveyed: *23* **Average D.B.H.:** *16.0 cm*

Planting Agency: *Unknown* **Average Height:** *11.1 m*

Present Land Owner: *Private* **Present Vigor:** *Good*

Former Stand Type: *Agriculture*

Total Volume: *247 m^3/ha (35.3 cu/ac)*
MAI: *10.7 m^3/ha (1.36 cu/ac)*

Merchantable Volume: *218 m^3/ha (31.2 cu/ac)*
MAI: *9.5 m^3/ha (1.53 cu/ac)*

Remarks: *Requires thinning.*

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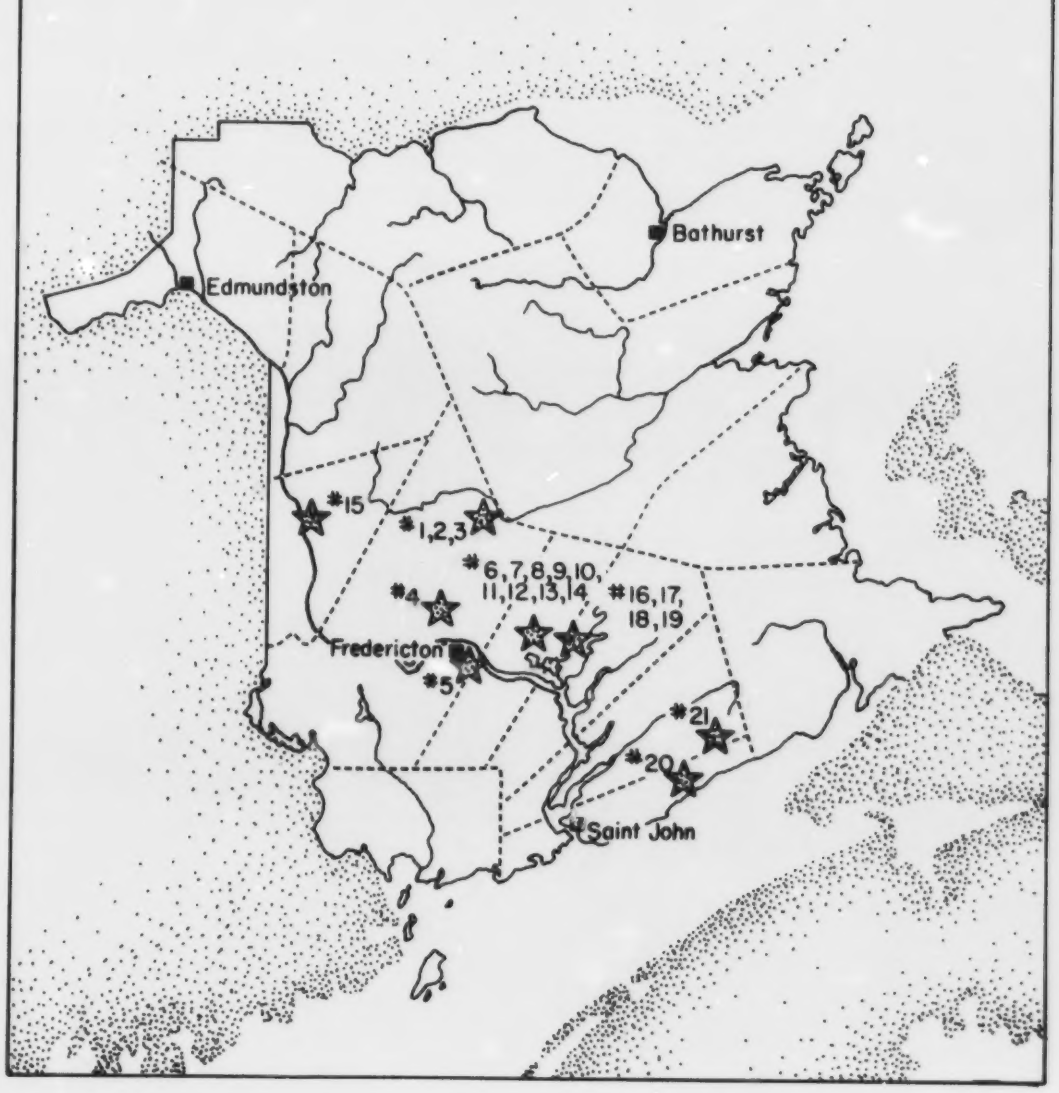
P.E.I. 10

Selected Older Plantations in NEW BRUNSWICK



Plantation Record

Species: *Red Pine*

Plantation # *N.B. 1* **Provincial Reference:** *P-3*

Location: *Gordonvale, York County*

National Topographic Map # *21 J/7* **Grid Reference:** *899492*

Aerial Photo # *75-511-226*

Date of Survey: *14/01/83* **Size of Plantation:** *0.8 ha*

Date of Planting: *1948* **Present Density:** *2280 Stems/ha*

Age When Surveyed: *35* **Average D.B.H.:** *18.7 cm*

Planting Agency: *Unknown* **Average Height:** *18.8 m*

Present Land Owner: *Private* **Present Vigor:** *Very good*

Former Stand Type: *Agriculture*

Total Volume:	*409*	m^3/ha *(58.5 cu/ac)*
MAI:	*11.7*	m^3/ha *(1.67 cu/ac)*
Merchantable Volume:	*374*	m^3/ha *(53.5 cu/ac)*
MAI:	*10.7*	m^3/ha *(1.53 cu/ac)*

Remarks: *Requires thinning.*

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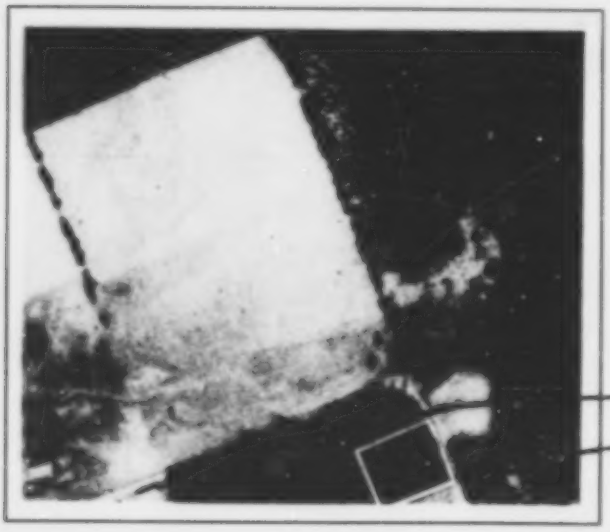

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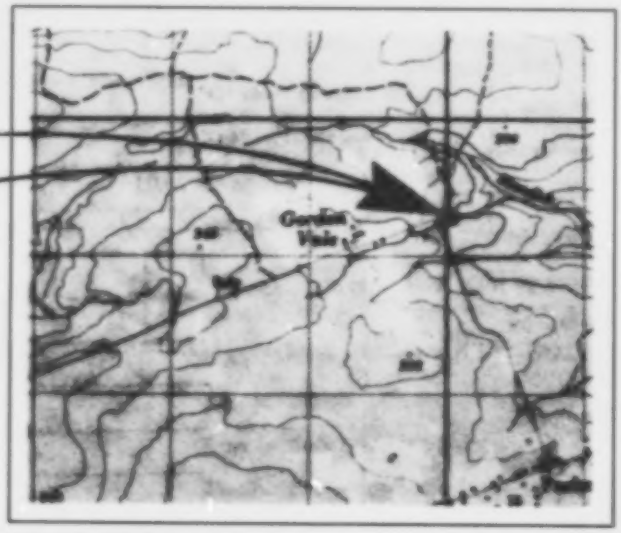

N.B. 1

Plantation Record

Species: *Red Pine*

Plantation # *N.B. 2* **Provincial Reference:** *N/A*

Location: *Gordonvale, York County*

National Topographic Map # *21 J/7* **Grid Reference:** *901495*

Aerial Photo # *75-511-226*

Date of Survey: *14/01/83* **Size of Plantation:** *1.0 ha*

Date of Planting: *1948* **Present Density:** *1775 Stems/ha*

Age When Surveyed: *35* **Average D.B.H.:** *21.2 cm*

Planting Agency: *Unknown* **Average Height:** *15.8 m*

Present Land Owner: *Private* **Present Vigor:** *Very good*

Former Stand Type: *Agriculture*

Total Volume:	*415 m^3/ha (59.4 cu/ac)*
MAI:	*11.8 m^3/ha (1.70 cu/ac)*
Merchantable Volume:	*385 m^3/ha (55.1 cu/ac)*
MAI:	*11.0 m^3/ha (1.57 cu/ac)*

Remarks: *Requires light thinning.*

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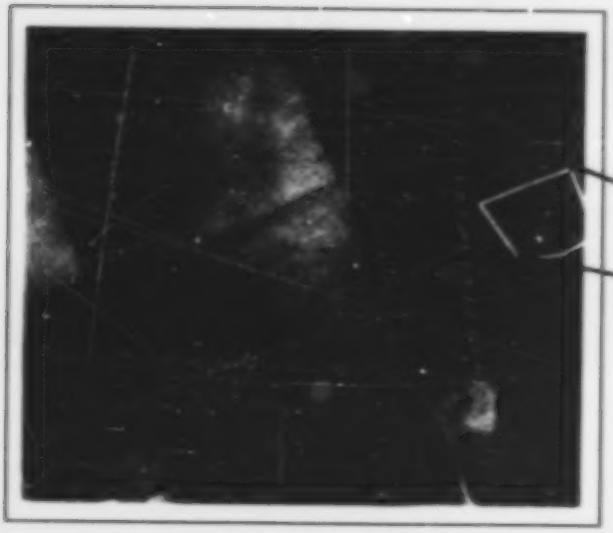

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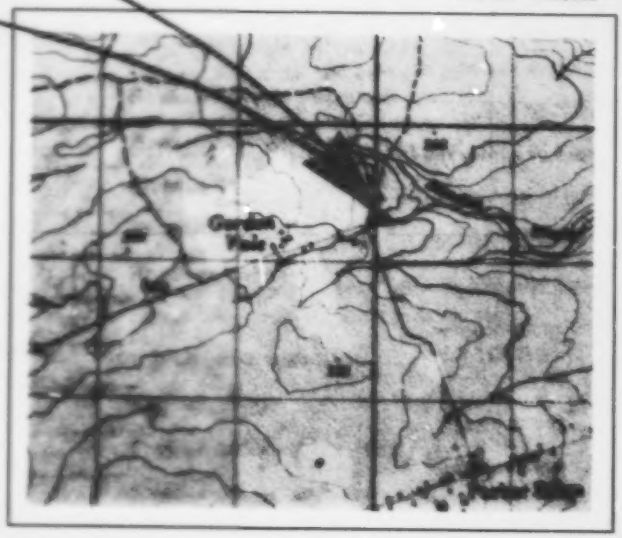

N.B. 2

Plantation Record

Species: *Red Pine*

Plantation # *N.B. 3* **Provincial Reference:** *N/A*

Location: *Gordonvale, York County*

National Topographic Map # *21 J/7* **Grid Reference:** *894497*

Aerial Photo # *75-511-226*

Date of Survey: *25/03/83* **Size of Plantation:** *1.0 ha*

Date of Planting: *1952* **Present Density:** *1730 Stems/ha*

Age When Surveyed: *31* **Average D.B.H.:** *19.7 cm*

Planting Agency: *Unknown* **Average Height:** *14.3 m*

Present Land Owner: *Private* **Present Vigor:** *Very good*

Former Stand Type: *Agriculture*

Total Volume:	*350*	m^3/ha *(50.1 cu/ac)*
MAI:	*11.3*	m^3/ha *(1.62 cu/ac)*
Merchantable Volume:	*324*	m^3/ha *(46.3 cu/ac)*
MAI:	*10.4*	m^3/ha *(1.49 cu/ac)*

Remarks: *Requires pruning and thinning; 5% of trees are forked at base.*

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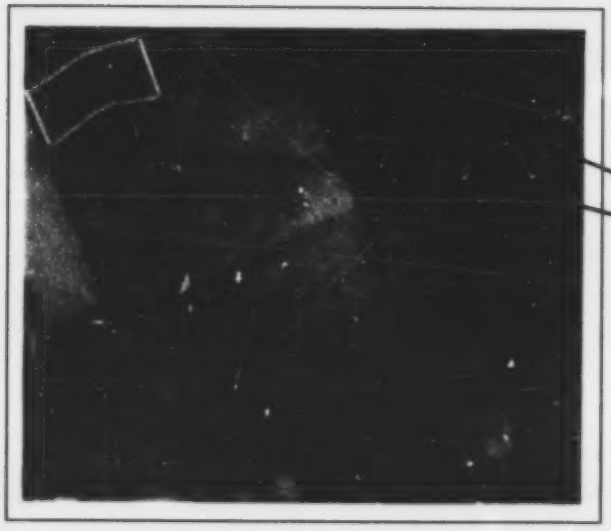

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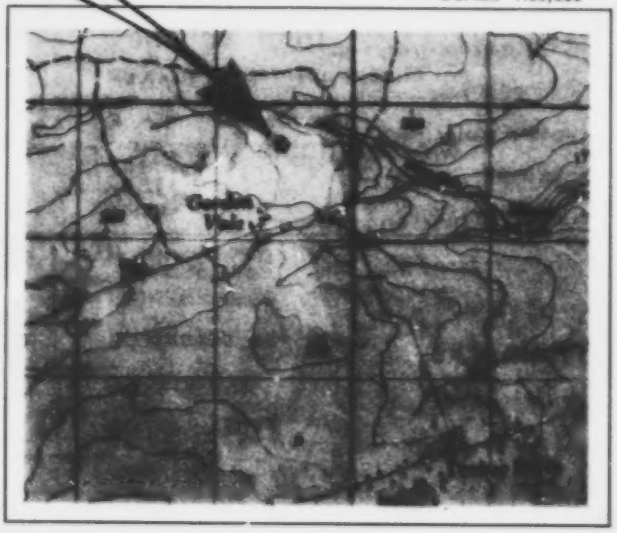


N.B. 3

Plantation Record

Species: *Red Pine*

Plantation # *N.B. 4* **Provincial Reference:** *P-2*

Location: *Burtts Corner, York County*

National Topographic Map # *21 J/2* **Grid Reference:** *674000*

Aerial Photo # *76-521-57*

Date of Survey: *11/01/83* **Size of Plantation:** *0.3 ha*

Date of Planting: *1952* **Present Density:** *2710 Stems/ha*

Age When Surveyed: *31* **Average D.B.H.:** *17.4 cm*

Planting Agency: *Private* **Average Height:** *14.6 m*

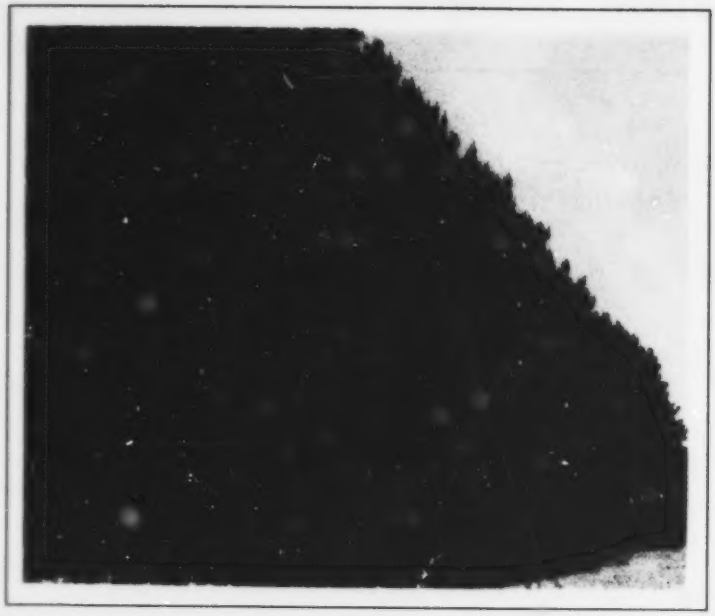
Present Land Owner: *Private* **Present Vigor:** *Good*

Former Stand Type: *Agriculture*

Total Volume: *390 m^3/ha (55.8 cu/ac)*
MAI: *12.6 m^3/ha (1.80 cu/ac)*

Merchantable Volume: *351 m^3/ha (50.3 cu/ac)*
MAI: *11.3 m^3/ha (1.62 cu/ac)*

Remarks: *Requires thinning*



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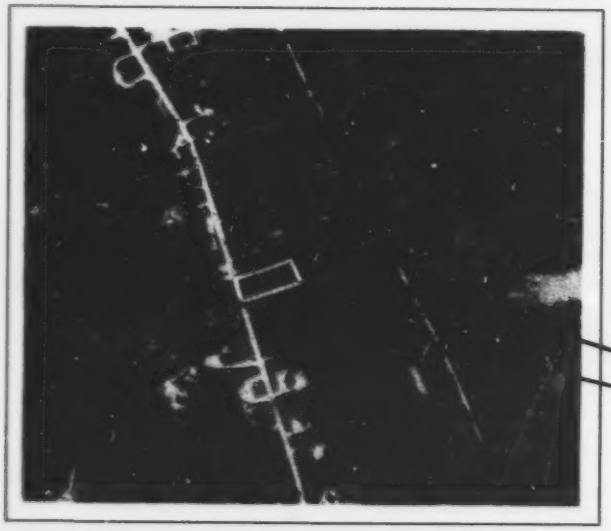

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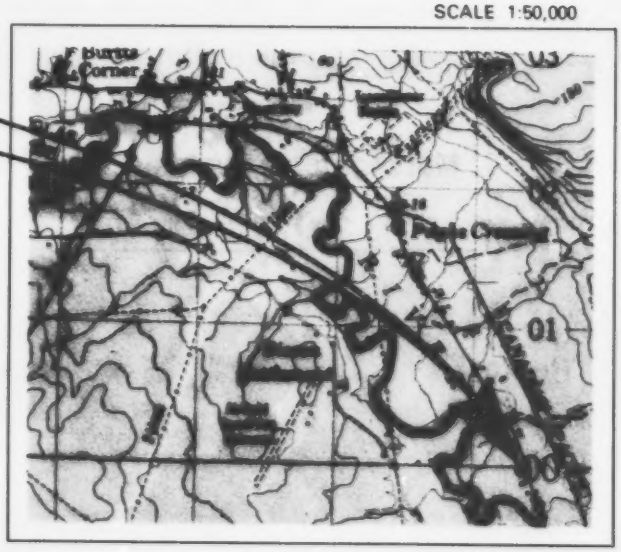

N.B. 4

Plantation Record

Species : *Red Pine*

Plantation # *N.B. 5* **Provincial Reference :** *R.S.P.-12*

Location : *U.N.B. Woodlot, Fredericton, N.B.*

National Topographic Map # *21 G/15* **Grid Reference :** *809859*

Aerial Photo # *76-517-113*

Date of Survey : *07/04/83* **Size of Plantation :** *0.25 ha*

Date of Planting : *1931* **Present Density :** *600 Stems/ha*

Age When Surveyed : *52* **Average D.B.H. :** *28.4 cm*

Planting Agency : *U.N.B.* **Average Height :** *21.9 m*

Present Land Owner : *U.N.B.* **Present Vigor :** *Good*

Former Stand Type : *Agriculture*

Total Volume :	*351* m^3*/ha*	*(50.2 cu/ac)*
MAI :	*6.8* m^3*/ha*	*(0.96 cu/ac)*
Merchantable Volume :	*331* m^3*/ha*	*(47.4 cu/ac)*
MAI :	*6.4* m^3*/ha*	*(0.91 cu/ac)*

Remarks : *Plantation has been thinned several times and pruned.*

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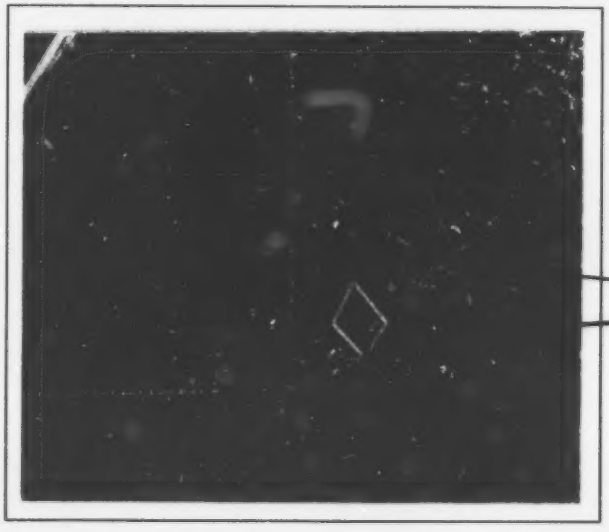

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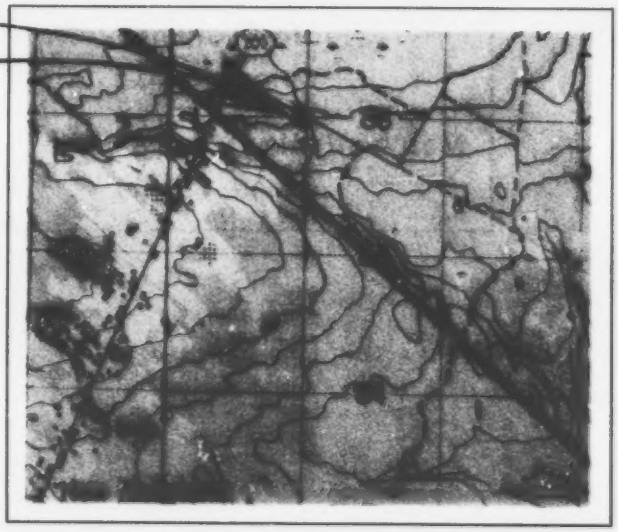


N.B. 5

Plantation Record

Species : *Red Pine*

Plantation # *N.B. 6* **Federal Reference :** *P.P.P. 11*

Location : *Acadia Forest Experiment Station, Compartment 26, Sunbury County*

National Topographic Map # *21 G/16* **Grid Reference :** *048930*

Aerial Photo # *76-517-268*

Date of Survey : *17/01/83* **Size of Plantation :** *0.7 ha*

Date of Planting : *1934* **Present Density :** *890 Stems/ha*

Age When Surveyed : *49* **Average D.B.H. :** *25.5 cm*

Planting Agency : *C.F.S.* **Average Height :** *18.4 m*

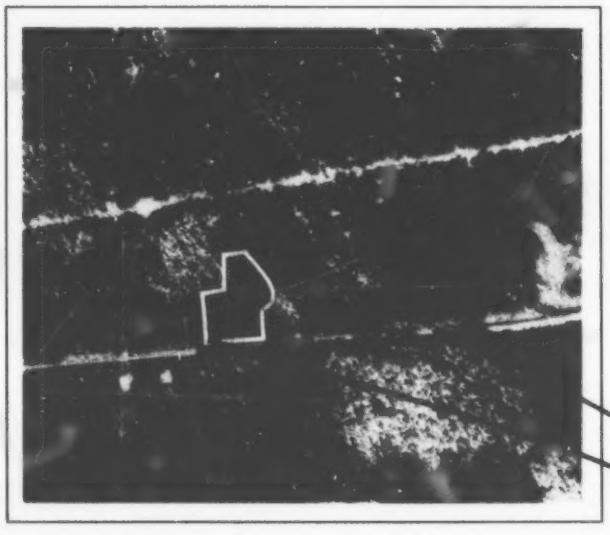
Present Land Owner : *Federal* **Present Vigor :** *Fair*

Former Stand Type : *Low grade hardwood of fire origin*

Total Volume :	*320* m^3*/ha*	*(45.7 cu/ac)*
MAI :	*6.5* m^3*/ha*	*(0.93 cu/ac)*
Merchantable Volume :	*300* m^3*/ha*	*(42.9 cu/ac)*
MAI :	*6.1* m^3*/ha*	*(0.88 cu/ac)*

Remarks : *Contains a few white pine not included in volume.*

SCALE 1:10,000



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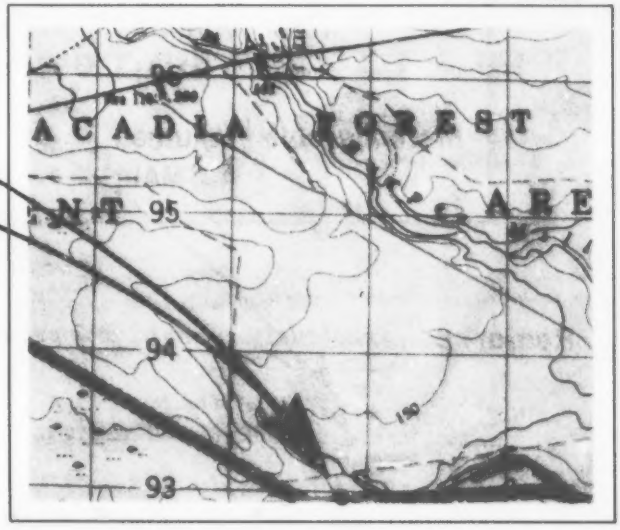

N.B. 6

Plantation Record

Species: *White Pine (Pinus strobus L.)*

Plantation # *N.B. 7* **Provincial Reference:** *P.P.P. 18*

Location: *Acadia Forest Experiment Station, Compartment 26, Sunbury County*

National Topographic Map # *21 G/16* **Grid Reference:** *071930*

Aerial Photo # *76-517-269*

Date of Survey: *25/03/83*

Date of Planting: *1936*

Age When Surveyed: *47*

Planting Agency: *C.F.S.*

Present Land Owner: *Federal*

Former Stand Type: *Fire origin*

Size of Plantation: *4.4 ha*

Present Density: *1180 Stems/ha*

Average D.B.H.: *25.4 cm*

Average Height: *16.8 m*

Present Vigor: *Fair*

Total Volume:	*332* m^3*/ha*	*(47.6 cu/ac)*
MAI:	*7.1* m^3*/ha*	*(1.01 cu/ac)*
Merchantable Volume:	*311* m^3*/ha*	*(44.5 cu/ac)*
MAI:	*6.6* m^3*/ha*	*(0.95 cu/ac)*

Remarks: *Previously thinned and pruned.*

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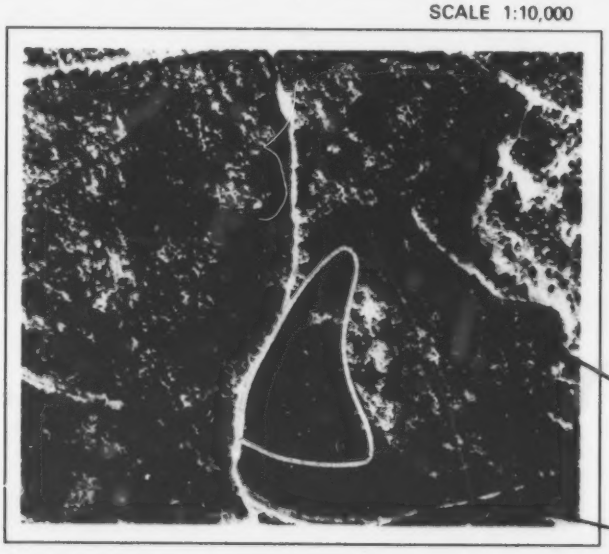

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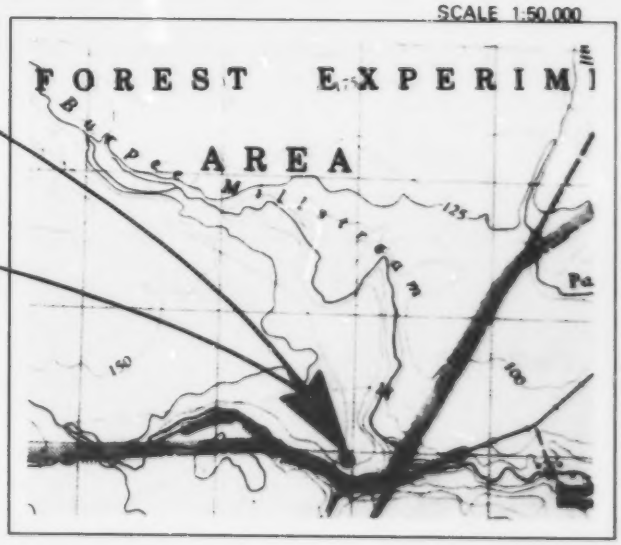

N.B. 7

Plantation Record

Species: *White Spruce (Picea glauca (Moench) Voss)*

Plantation # *N.B. 8* **Provincial Reference:** *P.P.P. 26*

Location: *Acadia Forest Experiment Station, Compartment 16, Sunbury County*

National Topographic Map # *21 J/1* **Grid Reference:** *140984*

Aerial Photo # *76-520-193*

Date of Survey: *09/03/83* **Size of Plantation:** *0.45 ha*

Date of Planting: *1943* **Present Density:** *1730 Stems/ha*

Age When Surveyed: *40* **Average D.B.H.:** *16.2 cm*

Planting Agency: *C.F.S.* **Average Height:** *12.6 m*

Present Land Owner: *Federal* **Present Vigor:** *Fair*

Former Stand Type: *Low grade hardwood of fire origin*

Total Volume: *181 m^3/ha (25.9 cu/ac)*
MAI: *4.5 m^3/ha (0.65 cu/ac)*

Merchantable Volume: *160 m^3/ha (22.8 cu/ac)*
MAI: *4.0 m^3/ha (0.57 cu/ac)*

Remarks:

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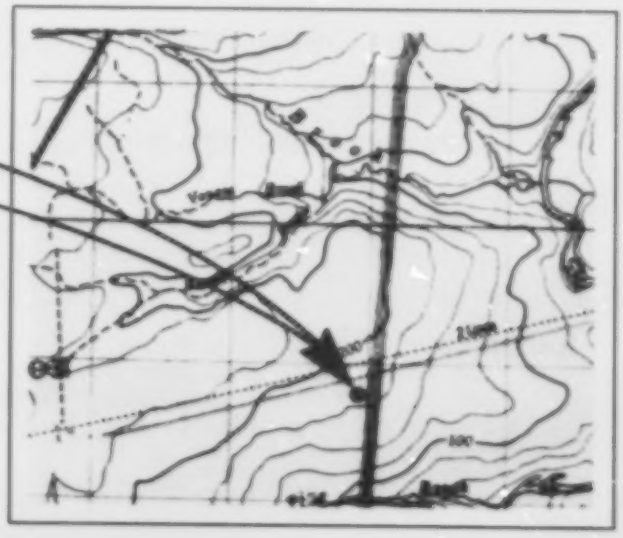

N.B. 8

Plantation Record

Species: *Red Pine*

Plantation # *N.B. 9* **Federal Reference:** *P.P.P. 15*

Location: *Acadia Forest Experiment Station, Compartment 20, Sunbury County*

National Topographic Map # *21 G/16* **Grid Reference:** *060965*

Aerial Photo # *76-518-202*

Date of Survey: *18/01/83* **Size of Plantation:** *1.4 ha*

Date of Planting: *1939* **Present Density:** *750 stems/ha*

Age When Surveyed: *44* **Average D.B.H.:** *28.5 cm*

Planting Agency: *C.F.S.* **Average Height:** *18.1 m*

Present Land Owner: *Federal* **Present Vigor:** *Fair*

Former Stand Type: *Low grade hardwood stand of fire origin*

Total Volume: *380 m^3/ha (54.4 cu/ac)*
MAI: *8.6 m^3/ha (1.24 cu/ac)*

Merchantable Volume: *360 m^3/ha (51.5 cu/ac)*
MAI: *8.2 m^3/ha (1.17 cu/ac)*

Remarks: *Originally planted as a mixture of red pine, white spruce and red spruce. The pine has overtopped and suppressed the spruce, causing 50% mortality. The volume of the spruce is insignificant and is not included in the above volume summary.*

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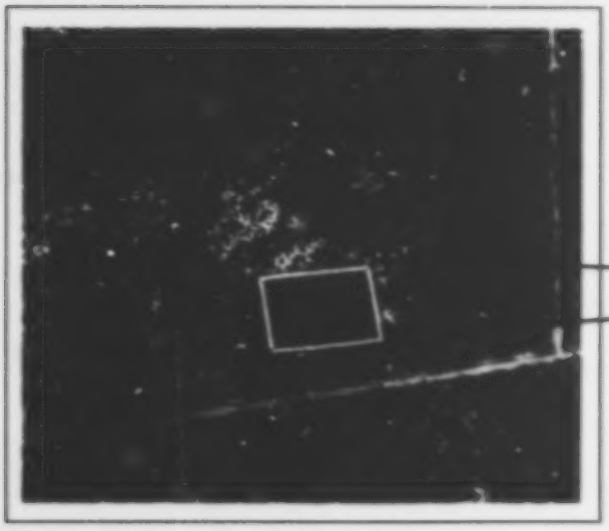

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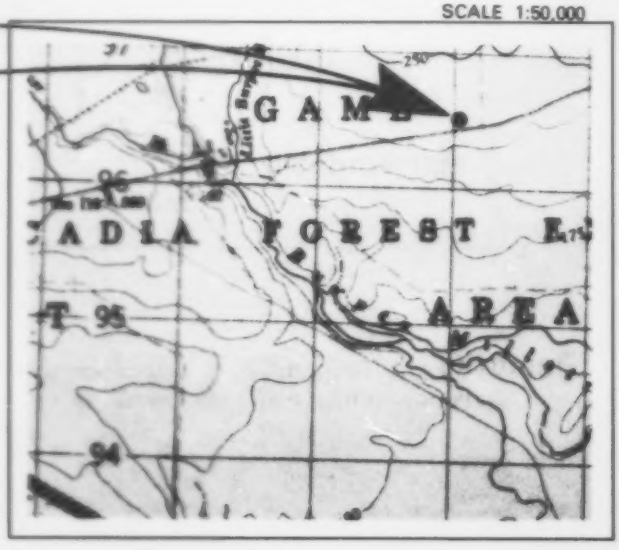

N.B. 9

Plantation Record

Species: *Red Pine*

Plantation # *N.B. 10* **Federal Reference:** *P.P.P. 16*

Location: *Acadia Forest Experiment Station, Compartment 19, Sunbury County*

National Topographic Map # *21 G/16* **Grid Reference:** *048960*

Aerial Photo # *76-518-202*

Date of Survey: *25/01/83* **Size of Plantation:** *0.9 ha*

Date of Planting: *1939* **Present Density:** *495 Stems/ha*

Age When Surveyed: *44* **Average D.B.H.:** *30.8 cm*

Planting Agency: *C.F.S.* **Average Height:** *16.4 m*

Present Land Owner: *Federal* **Present Vigor:** *Fair*

Former Stand Type: *Low grade hardwood stand of fire origin*

Total Volume:	*280* m^3*/ha*	*(40.0 cu/ac)*
MAI:	*6.4* m^3*/ha*	*(0.91 cu/ac)*
Merchantable Volume:	*265* m^3*/ha*	*(37.9 cu/ac)*
MAI:	*6.0* m^3*/ha*	*(0.86 cu/ac)*

Remarks: *Originally planted as a mixture of red pine, white spruce and red spruce. Only red pine remains as a significant portion of plantation volume.*

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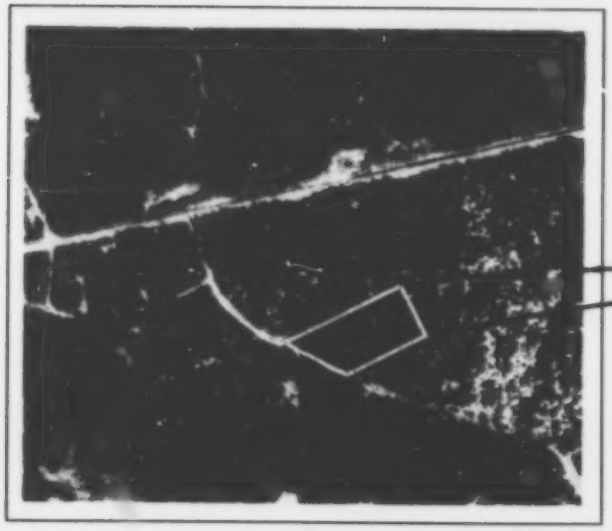

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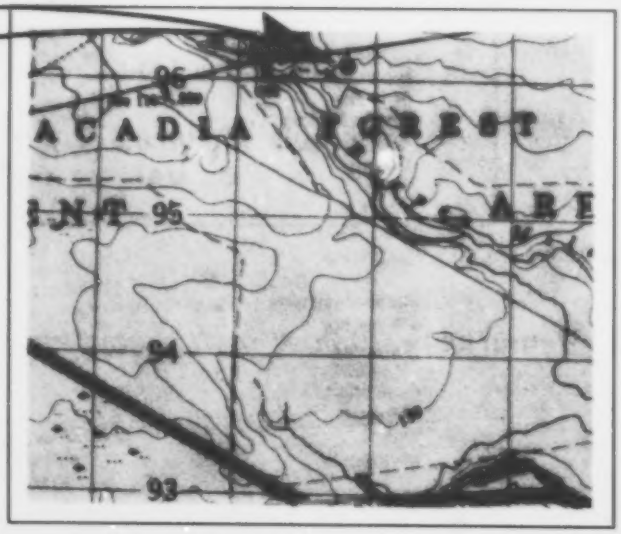

N.B. 10

Plantation Record

Species: *Red Pine*

Plantation # *N.B. 11* **Federal Reference:** *PPB-8*

Location: *Acadia Forest Experiment Station, Compartment 18, Sunbury County*

National Topographic Map # *21 G/16* **Grid Reference:** *041956*

Aerial Photo # *76-518-202*

Date of Survey: *25/01/83* **Size of Plantation:** *1.5 ha*

Date of Planting: *1934* **Present Density:** *1390 Stems/ha*

Age When Surveyed: *49* **Average D.B.H.:** *23.0 cm*

Planting Agency: *C.F.S.* **Average Height:** *18.1 m*

Present Land Owner: *Federal* **Present Vigor:** *Fair*

Former Stand Type: *Low grade hardwood stand of fire origin*

Total Volume: *380 m^3/ha (54.3 cu/ac)*
MAI: *7.8 m^3/ha (1.11 cu/ac)*

Merchantable Volume: *352 m^3/ha (50.4 cu/ac)*
MAI: *7.2 m^3/ha (1.03 cu/ac)*

Remarks: *Thinned to different spacings.*

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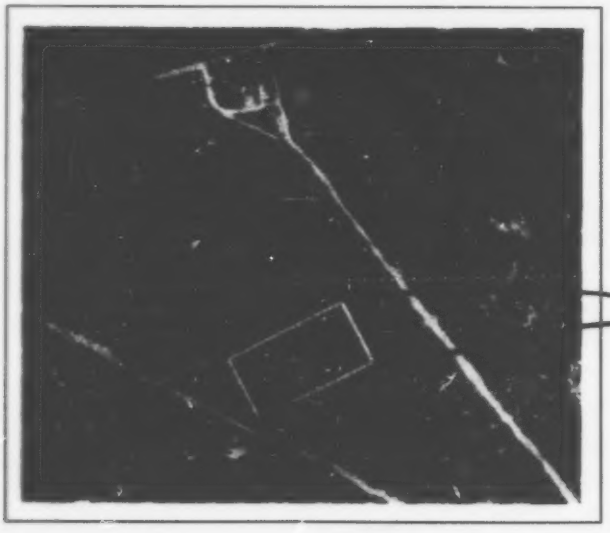

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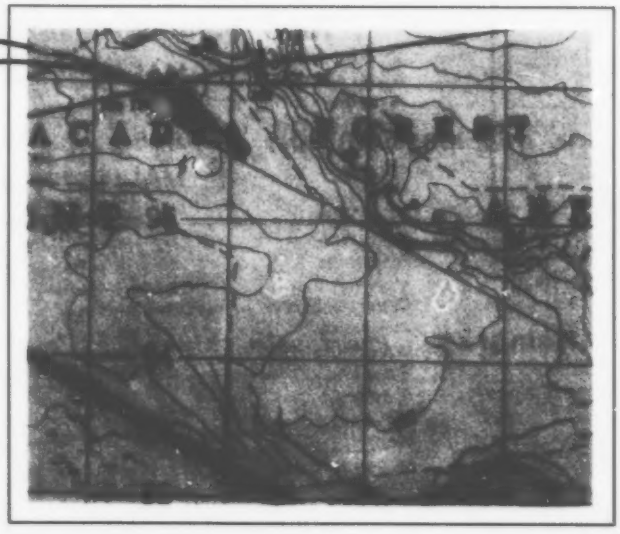

N.B. 11

Plantation Record

Species: *White Pine*

Plantation # *N.B. 12* **Federal Reference:** *P.P.P. 8*

Location: *Acadia Forest Experiment Station, Compartment 18 & 19, Sunbury County*

National Topographic Map # *21 G/16* **Grid Reference:** *043955*

Aerial Photo # *76-518-202*

Date of Survey: *25/01/83* **Size of Plantation:** *0.8 ha*

Date of Planting: *1934* **Present Density:** *1080 stems/ha*

Age When Surveyed: *49* **Average D.B.H.:** *22.9 cm*

Planting Agency: *C.F.S.* **Average Height:** *16.9 m*

Present Land Owner: *Federal* **Present Vigor:** *Fair*

Former Stand Type: *Low grade hardwood stand of fire origin*

Total Volume: *314 m^3/ha (44.9 cu/ac)*
MAI: *6.4 m^3/ha (0.92 cu/ac)*

Merchantable Volume: *295 m^3/ha (42.2 cu/ac)*
MAI: *6.0 m^3/ha (0.86 cu/ac)*

Remarks: *Previously thinned.*

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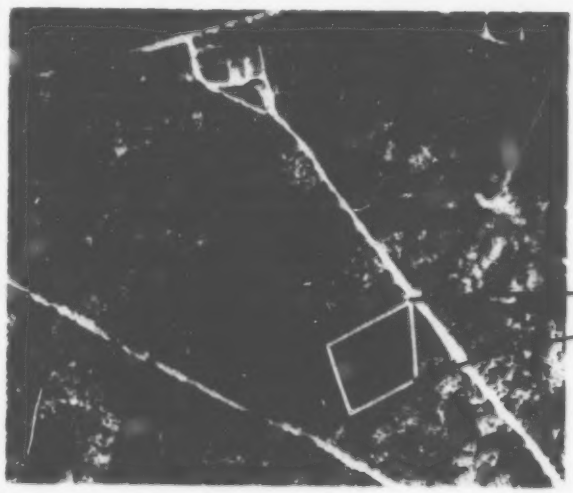

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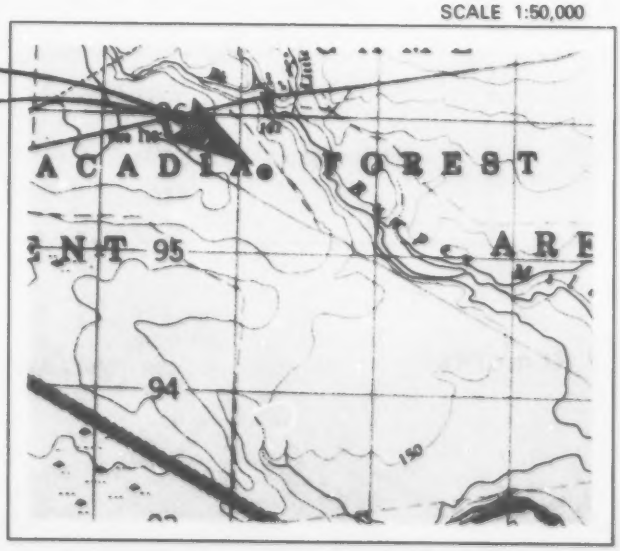

N.B. 12

Plantation Record

Species : *Red Pine*

Plantation # *N.B. 13* **Federal Reference :** *P.P.P. 16*

Location : *Acadia Forest Experiment Station, Compartment 17, Sudbury County*

National Topographic Map # *21 G/16* **Grid Reference :** *023956*

Aerial Photo # *76-518-202*

Date of Survey : *19/01/83* **Size of Plantation :** *0.3 ha*

Date of Planting : *1936* **Present Density :** *1350 Stems/ha*

Age When Surveyed : *47* **Average D.B.H. :** *20.8 cm*

Planting Agency : *C.F.S.* **Average Height :** *16.7 m*

Present Land Owner : *Federal* **Present Vigor :** *Good*

Former Stand Type : *Low grade hardwood stand of fire origin*

Total Volume : *331 m^3/ha (47.4 cu/ac)*
MAI : *7.0 m^3/ha (1.01 cu/ac)*

Merchantable Volume : *308 m^3/ha (44.0 cu/ac)*
MAI : *6.6 m^3/ha (0.94 cu/ac)*

Remarks : *Plantation was previously thinned.*

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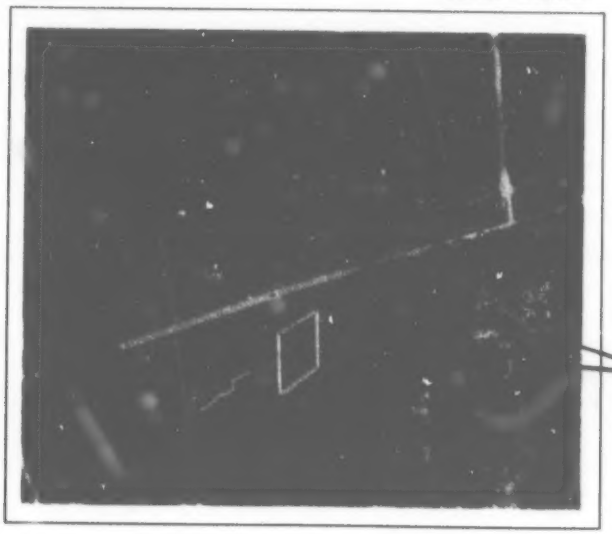

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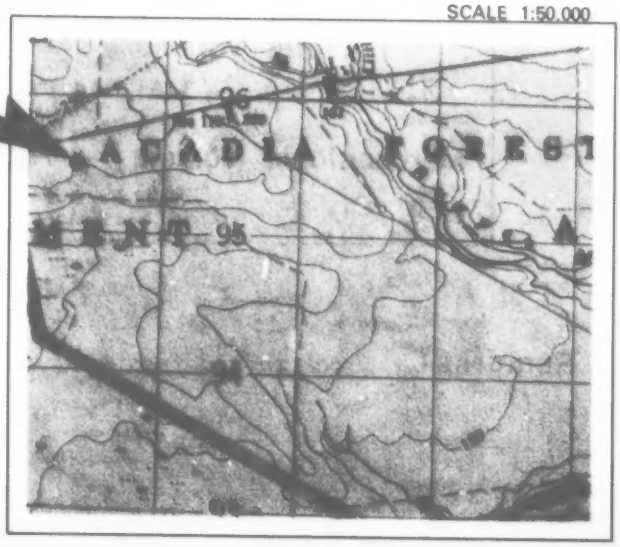

N.B. 13

Plantation Record

Species: *White Spruce*

Plantation # *N.B. 14* **Federal Reference:** *P.P.P. 23*

Location: *Acadia Forest Experiment Station, Compartment 18, Sunbury County*

National Topographic Map # *21 G/16* **Grid Reference:** *037965*

Aerial Photo # *76-518-202*

Date of Survey: *09/03/83* **Size of Plantation:** *0.1 ha*

Date of Planting: *1942* **Present Density:** *1920 Stems/ha*

Age When Surveyed: *41* **Average D.B.H.:** *16.0 cm*

Planting Agency: *C.F.S.* **Average Height:** *12.2 m*

Present Land Owner: *Federal* **Present Vigor:** *Fair*

Former Stand Type: *Low grade hardwood of fire origin*

Total Volume: *194 m^3/ha (27.8 cu/ac)*
MAI: *4.7 m^3/ha (0.68 cu/ac)*

Merchantable Volume: *171 m^3/ha (24.4 cu/ac)*
MAI: *4.2 m^3/ha (0.60 cu/ac)*

Remarks: *Stock raised from seed collection at Val Cartier, Quebec.*

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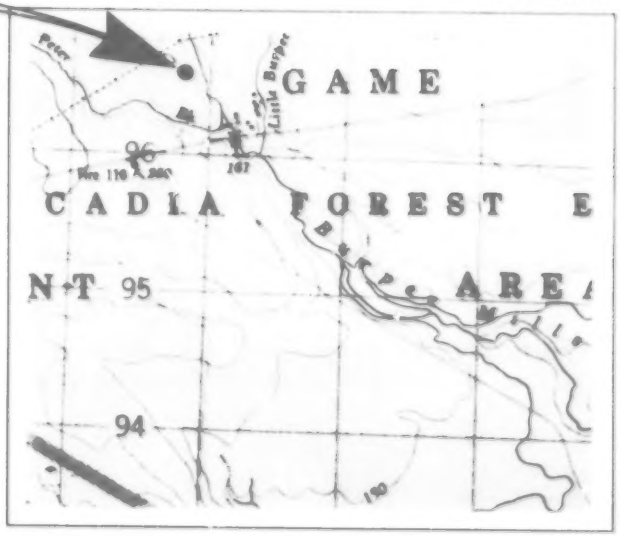


N.B. 14

Plantation Record

Species : *Red Pine*

Plantation # *N.B. 15* **Provincial Reference :** *P-6*

Location : *Florenceville, Carleton County*

National Topographic Map # *21 J/15* **Grid Reference :** *074427*

Aerial Photo # *75-511-117*

Date of Survey : *10/03/83* **Size of Plantation :** *0.2 ha*

Date of Planting : *1947* **Present Density :** *860 Stems/ha*

Age When Surveyed : *36* **Average D.B.H. :** *24.3 cm*

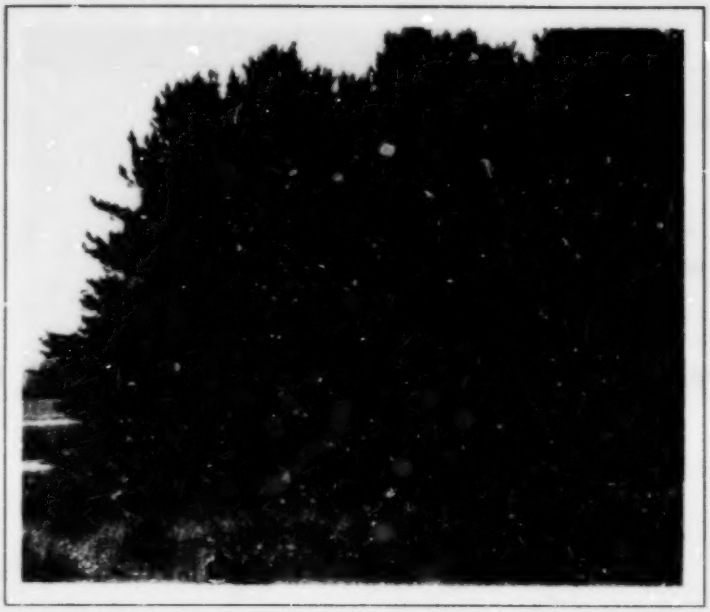
Planting Agency : *Unknown* **Average Height :** *16.6 m*

Present Land Owner : *Private* **Present Vigor :** *Very good*

Former Stand Type : *Agriculture*

Total Volume :	*292* m^3*/ha*	*(41.7 cu/ac)*
MAI :	*8.1* m^3*/ha*	*(1.16 cu/ac)*
Merchantable Volume :	*274* m^3*/ha*	*(39.2 cu/ac)*
MAI :	*7.6* m^3*/ha*	*(1.09 cu/ac)*

Remarks : *Originally planted with alternate rows of red pine and white spruce. The pine have over-topped and suppressed the spruce.*



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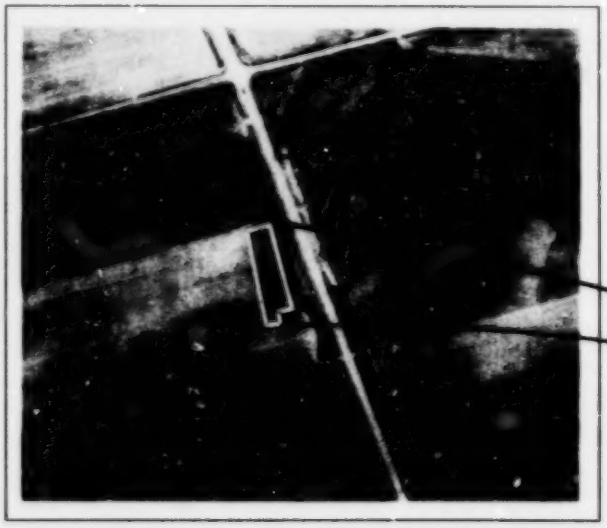

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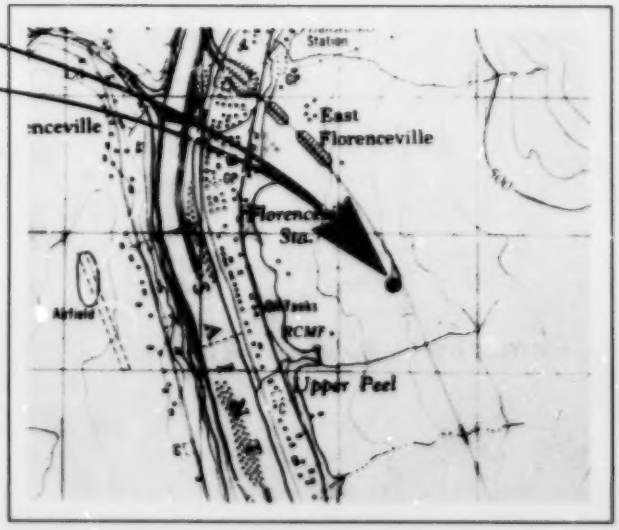

N.B. 15

Plantation Record

Species : *Red Pine*

Plantation # *N.B. 16* Provincial Reference : *P-1*

Location : *Sunnyside Beach, Queens County*

National Topographic Map # *21 G/16* Grid Reference : *273965*

Aerial Photo # *76-518-215*

Date of Survey : *12/01/83* Size of Plantation : *1.8 ha*

Date of Planting : *1949* Present Density : *2445 Stems/ha*

Age When Surveyed : *34* Average D.B.H. : *17.0 cm*

Planting Agency : *Unknown* Average Height : *14.0 m*

Present Land Owner : *Private* Present Vigor : *Good*

Former Stand Type : *Agriculture*

Total Volume :	*284* m^3*/ha*	*(40.7 cu/ac)*
MAI :	*8.4* m^3*/ha*	*(1.20 cu/ac)*
Merchantable Volume :	*250* m^3*/ha*	*(35.7 cu/ac)*
MAI :	*7.4* m^3*/ha*	*(1.05 cu/ac)*

Remarks : *Requires thinning.*

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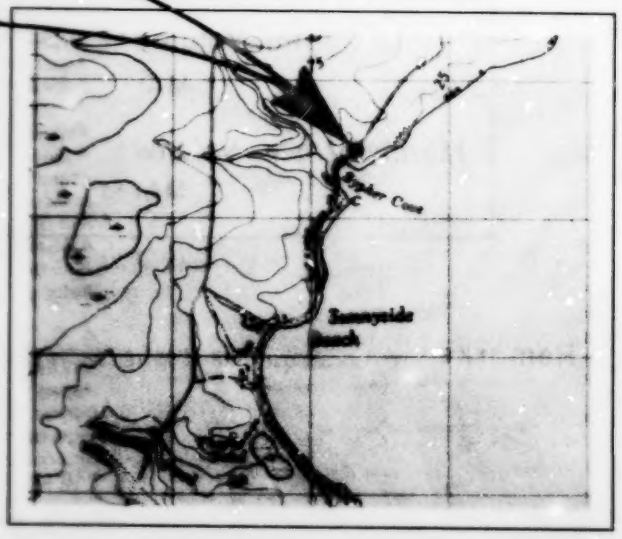

N.B. 16

Plantation Record

Species: *Norway Spruce*

Plantation # *N.B. 17* **Provincial Reference:** *N/A*

Location: *Sunnyside Beach, Queens County*

National Topographic Map # *21 G/16* **Grid Reference:** *273964*

Aerial Photo # *76-518-215*

Date of Survey: *12/01/83* **Size of Plantation:** *0.4 ha*

Date of Planting: *1953* **Present Density:** *1950 Stems/ha*

Age When Surveyed: *30* **Average D.B.H.:** *19.5 cm*

Planting Agency: *Unknown* **Average Height:** *11.0 m*

Present Land Owner: *Private* **Present Vigor:** *Good*

Former Stand Type: *Agriculture*

Total Volume:	*284* m^3*/ha*	*(40.6 cu/ac)*
MAI:	*9.5* m^3*/ha*	*(1.35 cu/ac)*
Merchantable Volume:	*261* m^3*/ha*	*(37.3 cu/ac)*
MAI:	*8.7* m^3*/ha*	*(1.24 cu/ac)*

Remarks: *Requires light t... and pruning.*

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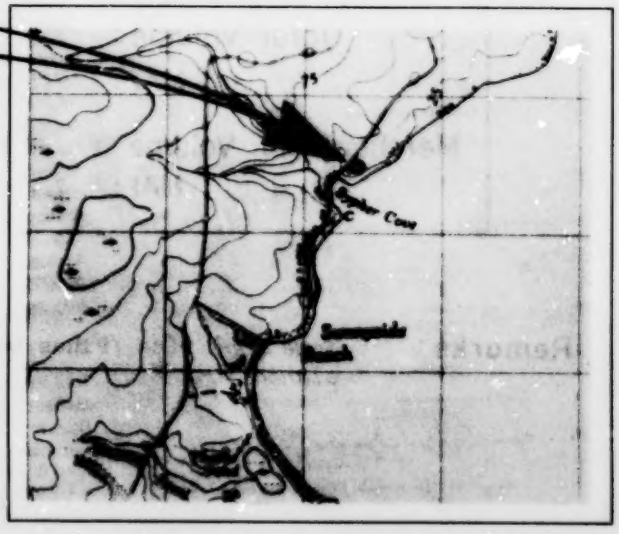

N.B. 17

Plantation Record

Species: *Red Pine*

Plantation # *N.B. 18* **Provincial Reference:** *N/A*

Location: *Sunnyside Beach, Queens County*

National Topographic Map # *21 G/16* **Grid Reference:** *272964*

Aerial Photo # *76-518-215*

Date of Survey: *12/01/83* **Size of Plantation:** *1.1 ha*

Date of Planting: *1956* **Present Density:** *1445 Stems/ha*

Age When Surveyed: *27* **Average D.B.H.:** *20.2 cm*

Planting Agency: *Unknown* **Average Height:** *11.0 m*

Present Land Owner: *Private* **Present Vigor:** *Good*

Former Stand Type: *Agriculture*

Total Volume:	*213* m^3/ha	*(30.5 cu/ac)*
MAI:	*7.9* m^3/ha	*(1.13 cu/ac)*
Merchantable Volume:	*196* m^3/ha	*(28.0 cu/ac)*
MAI:	*7.3* m^3/ha	*(1.04 cu/ac)*

Remarks: *Some jack pine (***Pinus banksiana** *Lamb.) scattered throughout the plantation.*

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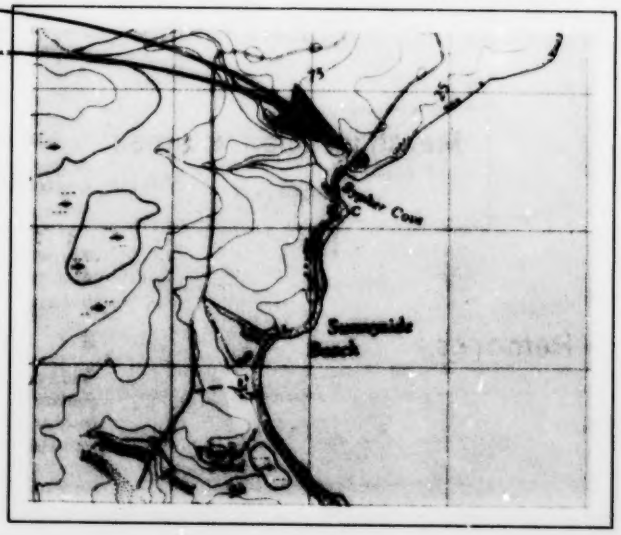

N.B. 18

Plantation Record

Species: *Red Pine*

Plantation # *N.B. 19* **Provincial Reference:** *N/A*

Location: *Sunnyside Beach, Queens County*

National Topographic Map # *21 G/16* **Grid Reference:** *272965*

Aerial Photo # *76-518-215*

Date of Survey: *12/01/83* **Size of Plantation:** *0.8 ha*

Date of Planting: *1954* **Present Density:** *1810 Stems/ha*

Age When Surveyed: *29* **Average D.B.H.:** *20.2 cm*

Planting Agency: *Unknown* **Average Height:** *12.7 m*

Present Land Owner: *Private* **Present Vigor:** *Good*

Former Stand Type: *Agriculture*

Total Volume:	*329*	m^3/ha *(47.1 cu/ac)*
MAI:	*11.3*	m^3/ha *(1.62 cu/ac)*
Merchantable Volume:	*304*	m^3/ha *(43. 6 cu/ac)*
MAI:	*10.5*	m^3/ha *(1.50 cu/ac)*

Remarks:

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N.B. 19

Plantation Record

Species : *Norway Spruce*

Plantation # *N.B. 20* **Provincial Reference :** *P.P.C. 11*

Location : *St Martins, St. John County*

National Topographic Map # *21 H/6* **Grid Reference :** *065313*

Aerial Photo # *77-502-60*

Date of Survey : *15/02/83* **Size of Plantation :** *3.3 ha*

Date of Planting : *1920* **Present Density :** *670 Stems/ha*

Age When Surveyed : *62* **Average D.B.H. :** *27.6 cm*

Planting Agency : *Pejepscot Paper Co.* **Average Height :** *19.6 m*

Present Land Owner : *Pejepscot Paper Co.* **Present Vigor :** *Poor to fair*

Former Stand Type : *Unknown*

Total Volume :	$307\ m^3/ha$	*(43.9 cu/ac)*
MAI :	$4.95\ m^3/ha$	*(0.71 cu/ac)*
Merchantable Volume :	$290\ m^3/ha$	*(41.4 cu/ac)*
MAI :	$4.68\ m^3/ha$	*(0.67 cu/ac)*

Remarks : *The plantation is mature and the volume is declining annually.*

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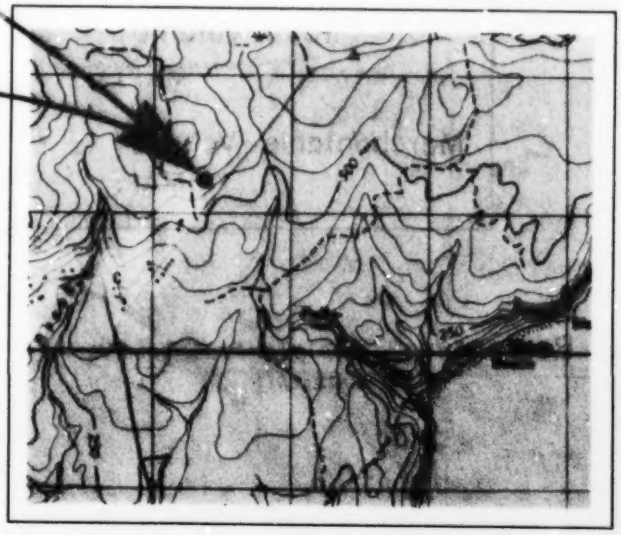


N.B. 20

Plantation Record

Species : *Red Pine*

Plantation # *N.B. 21* **Provincial Reference :** *P.P.C. 8*

Location : *Shepody Road (School's Dam), Kings County*

National Topographic Map # *21 H/11* **Grid Reference :** *185498*

Aerial Photo # *76-523-202*

Date of Survey : *18/03/83* **Size of Plantation :** *0.6 ha*

Date of Planting : *1921* **Present Density :** *1080 Stems/ha*

Age When Surveyed : *62* **Average D.B.H. :** *26.0 cm*

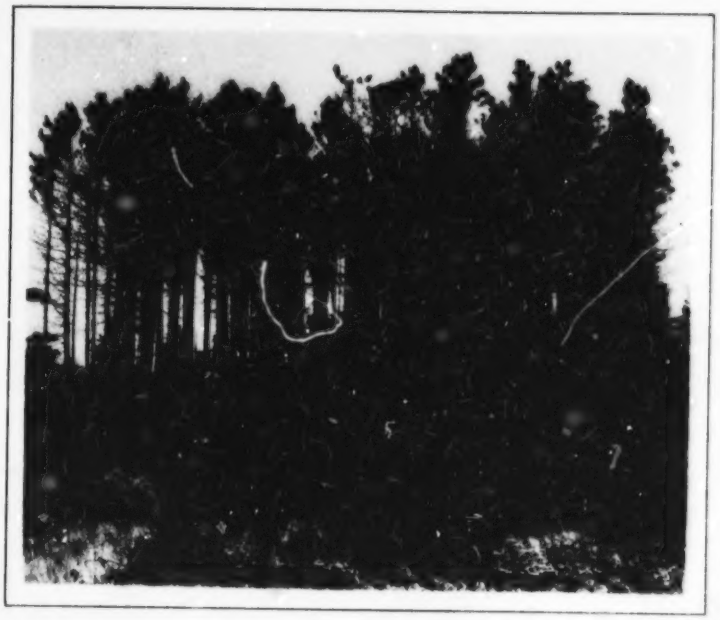
Planting Agency : *Pejepscot Paper Co* **Average Height :** *21.9 m*

Present Land Owner : *Pejepscot Paper Co* **Present Vigor :** *Poor to fair*

Former Stand Type : *Unknown*

Total Volume :	*500* m^3*/ha*	*(71.4 cu/ac)*
MAI :	*8.1* m^3*/ha*	*(1.15 cu/ac)*
Merchantable Volume :	*470* m^3*/ha*	*(67.3 cu/ac)*
MAI :	*7.6* m^3*/ha*	*(1.08 cu/ac)*

Remarks : *The plantation is mature to over-mature and volume is declining annually .*



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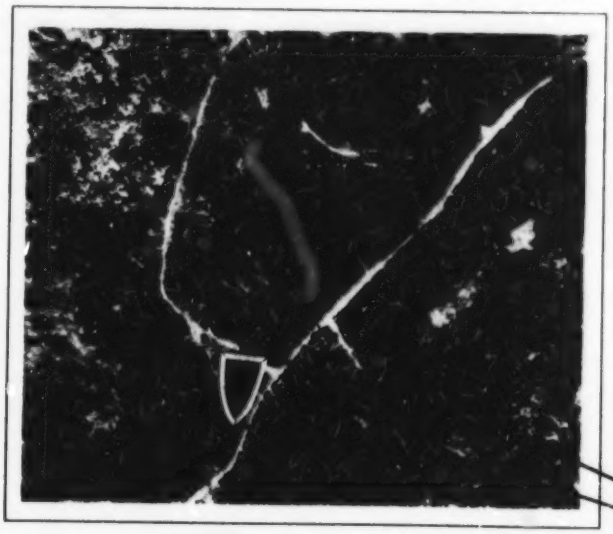

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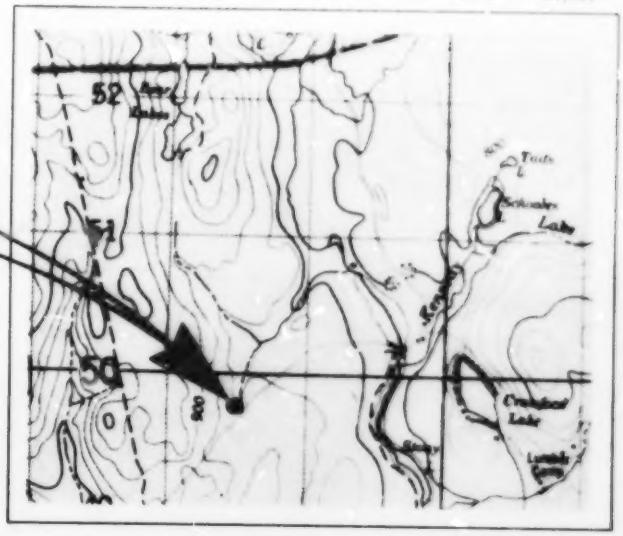

N.B. 21

POOR

QUALITY

ORIGINAL